BASIC MATHEMATICS WORK BOOK

FOR UP-LEVEL CLASSES

SCHOOL COMPLEX
ZPHS KAPUGALLU

SCHOOL COMPLEX, Z.P.HIGH SCHOOL, KAPUGALLU
KODAD (M), SURYAPET (DT)

BASIC MATHEMATICS PROGRAMME MODULE

PREPARED BY

1. *B. HANMANTHA RAO, ZPHS,KAPUGALLU*
2. *K. VENKATAREDDY, ZPHS, KAPUGALLU*
3. *K. SATYANARAYANA PRASAD, ZPHS, KAPUGALLU*
4. *P. V SRINIVASARAO, ZPHS ,KAPUGALLU*
5. *G. NAGAMANI, ZPHS, VOILASINGAVARAM*
6. *N .PRATAP, ZPHS, KODAD*
7. *R. BOSUBABU, ZPHS, KODAD*
8. *G. JYOTHI, ZPHS, KODAD*
9. *S .SUNITHA, ZPHS, KODAD*
10. *T. A. JANARADHAN RAO, ZPHS, NALLABANDAGUDEM*
11. *E. JAYA, ZPHS, NALLABANDAGUDEM*
12. *N .MOHAN RAO, ZPHS, YERRAVARAM*
13. *B .BALAJI, ZPHS, GONDRIYALA*
14. *B. SRINU, ZPHS ,GONDRIYALA*
15. *Y. NARAYANARAO, ZPHS, GUDIBANDA*
16. *G. KARUNA, ZPHS, GUDIBANDA*
17. *K .NIRMALA, ZPHS, AMEENABAD*
18. *N. KAVITHA, ZPHS, SHANTHINAGAR*
19. *S. JEEVANI, ZPHS, KUCHIPUDI*
20. *K. SRINIVASARAO, ZPHS, ANANTHAGIRI*
21. *K. NAGESWARRAO, ZPHS, CHIMIRYALA*
22. *B. ROSHIREDDY, ZPHS, GANAPAVARAM*
23. *CH. ARUNA, ZPHS, TB PALEM*
24. *P. SUNITHA, ZPHS, DORAKUNTA*
25. *V. SWARUPARANI, MPPS, BALAJINAGAR*
26. *SK .KHAJAMIYA, ZPHS, BALAJINAGAR*
27. *P. NARASIMHARAO, ZPHS, THOGARRAI*
28. *CH .RAMULU, ZPHS, PALARAM*
29. *D. SEETHARAMARAJU, ZPHS, TRIPURAVARAM*
30. *D .BALAJI, ZPHS, TRIPURAVARAM*
31. *G. PAVAN KUMAR, ZPHS, DORAKUNTA*
32. *V. RAMAKOTESWARARAO, UPS, KUCHIPUDITHANDA*

CO-ORDINATOR: ***Sri G. GOPAIAH, GHM, ZPHS, KAPUGALLU***

EDITING - COMPILATION: ***Sri B. HANMANTHA RAO, SA(M),ZPHS, KAPUGALLU***

INDEX

1. 1 TO 100 NUMBERS

I. A) FILL THE EMPTY BOXES IN THE TABLE WITH SUITABLE NUMBERS

1		3		5		7		9	10
	12		14		16		18		20
21		23		25		27		29	
	32		34		36		38		40
41		43		45		47		49	
	52		54		56		58		60
61		63		65		67		69	
	72		74		76		78		80
81		83		85		87		89	
	92		94		96		98		100

B) FILL THE EMPTY BOXES WITH CORRECT NUMBERS

1			4			7			10
		13			16			19	
	22			25			28		
31			34			37		39	
	42			45			48		
51			54			57			60
		63			66			69	
	72			75			78		
81			84			87			90
		93			96			99	100

C) FILL THE EMPTY BOXES WITH APPROPRIATE NUMBERS

1				5				9	
		13				17			
21				25				29	
		33				37			
41				45				49	
		53				57			
61				65				69	
		73				77			
81				85				89	
		93				97			

D) FILL THE EMPTY BOXES WITH CORRECT NUMBERS

1					6				
11					16				
21					26				
31					36				
41					46				
51					56				
61					66				
71					76				
81					86				
91					96				

E) FILL THE NUMBERS IN SEQUENCE IN THE FOLLOWING NUMBER GRID FROM 1 TO 100

2. ADDITION OF ONE DIGIT NUMBERS

A) VERTICAL TYPE

5 +8	8 +7	4 +7	0 +0	2 +6
4 +3	10 +9	10 +3	0 +5	8 +3
1 +9	7 +2	7 +3	6 +0	4 +8
5 +2	1 +5	7 +4	6 +2	5 +7

B) HORIZONTAL TYPE

9+9=	9+8=	4+4=	8+0=	6+9=
5+4=	1+8=	5+0=	5+6=	4+0=
4+7=	5+8=	6+8=	3+5=	3+7=
6+3=	8+5=	4+7=	2+4=	5+2=

C) FILL THE BLANKS WITH CORRECT NUMBER

___-_+0=10	_____- +3=13	3+_-____=7	5+_-____=13	____-_+9=13
_____+5=14	_____+2=6	_____+1=10	_____+5=12	8+_____=16
_____+8=9	_____+2=8	9+_____=17	_____+3=9	1+_____=7
_____+6=12	_____+2=4	_____+5=13	5+_____=10	9+_____=16

3. ADDITION OF TWO DIGIT NUMBERS

A) VERTICAL TYPE

54 +34	76 +12	10 +61	45 +33	75 +21
30 +33	20 +32	53 +44	90 +35	76 +12
47 +30	68 +21	52 +11	47 +21	60 +21
42 +52	67 +21	61 +21	68 +20	69 +00

B) HORIZONTAL TYPE

25+42=	97+31=	50+33=	40+10=	96+12=
73+10=	52+37=	14+65=	39+47=	83+13=
32+42=	79+18=	65+30=	53+14=	42+24=
21+15=	43+52=	46+52=	66+21=	62+21=

C) FILL THE EMPTY SPACES WITH APPROPRIATE NUMBERS

32+_____=94	20+_____=35	_____+39=53	91+_____=97	86+_____=96
_____+52=87	33+_____=96	_____+18=59	_____+54=82	_____+29=40
84+_____=98	_____+42=68	_____+30=82	15+_____=72	14+_____=53
_____+15=85	69+_____=93	28+_____=75	_____+62=76	_____+41=79

4. ADDITION OF THREE DIGIT NUMBERS

A. VERTICAL TYPE

888 +100	647 +222	871 +111	894 +101	486 +413
948 +121	926 +360	426 +661	347 +121	714 +133
277 +612	364 +110	575 +120	677 +300	216 +651
222 +722	738 +230	399 +100	400 +278	340 +119

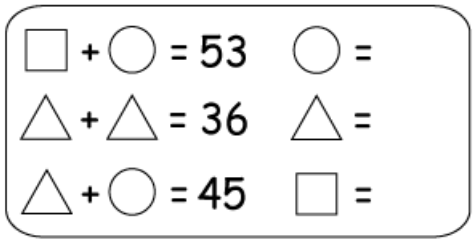
B) HORIZONTAL TYPE

295+634=___	504+233=___	431+704=___	230+ 596=___
137+ 366=___	492+295=___	646+221=___	518+112=___
535+303=___	604+652=___	445+ 306=___	709+1246=___
610+ 195=___	740+815=___	248+973=___	401+1378=___
745+166=___	149+ 193=___	484+528=___	213+ 490=___
337+636=___	595+ 172=___	109+603=___	884+640=___

C) FILL THE BLANKS WITH SUITABLE NUMBERS

_____+189=96	513+_____=1985	731+_____=1269;	_____+881=1093
864+_____= 902	_____+667= 948	_____+669=996	238+_____=590
_____+776=1775	135+_____=931	442+_____= 576	141+_____= 242
394+_____= 818	364+_____=778	_____+872=1038	_____+556=1153

TRY THIS !!



5. ADDITION OF FOUR DIGIT NUMBERS

A) VERTICAL TYPE

9987 +1832	2729 +2957	6120 +1430	7239 +8892	2250 +1518
5359 +7026	1714 +1659	7847 +5766	7956 +1056	7270 +1307
2358 +5591	3338 +9386	6336 +5363	2263 +2178	4202 +3679
8653 +7104	7064 +1038	5963 +1539	9534 +7432	5051 +3685

B. HORIZONTAL

4313+5019=	4270+5249=	5868+4475=	6299+2412=
4664+4858=	1104+1650=	6456+3232=	6627+2721=
5823+5651=	4560+3362=	1945+12358=	2816+1004=
9860+8072=	9654+1849=	7420+8388=	5432+1036=
4726+1510=	2788+1467=	8250+7773=	3258+4237=

C) FILL THE BLANKS WITH APPROPRIATE NUMBERS.

3850+_____=8993	5151+_____=7268	8598+_____=11655
_____+3770=10365	8978+_____=10926	9735+_____=13868
4440+_____= 6926	_____+1114=5184	_____+4696=14518
1872+_____=4946	7954+_____=14626	_____+1377=8645

6. WORD PROBLEMS (ADDITIONS)

❖ ***SOLVE THE FOLLOWING PROBLEMS***

1) Siddu has 10 bags. He buys 10 more bags. How many bags does he have in all?

2) Naresh has 10 cups. He buys 7 more cups. How many cups does he have in all?

3) Tarun has 8 bags. Sidd has 7 bags. How many bags do they have altogether?

4) Syam has 9 blocks. He buys 7 more blocks. How many blocks does he have in all?

5) John has 9 pens. Tom has 3 pens. How many pens do they have altogether?

6) Satyam has 3 pens. He finds 6 more pens. How many pens does he have in all?

7) Ramesh has 7 pencils. He buys 7 more pencils. How many pencils does he have in all?

8) There are 11 boys and 10 girls in a library. How many kids are there altogether?

9) Navya has 4 books. His sister gave 7 more. How many books in all?

10) Akhila has 7 books. He buys 8 more books. How many books does he have in all?

11) Kavya has 7 pencils. He finds 11 more pencils. How many pencils does he have in all?

12) There are 4 boys and 3 girls in a park. How many kids are there altogether?

13) Gopi has 10 books. He finds 9 more books. How many books does he have in all?

14) Ganesh has 6 pens. He buys 8 more pens. How many pens does he have in all?

15) Bhargav has 9 cups. Jeff has 10 cups. How many cups do they have altogether?

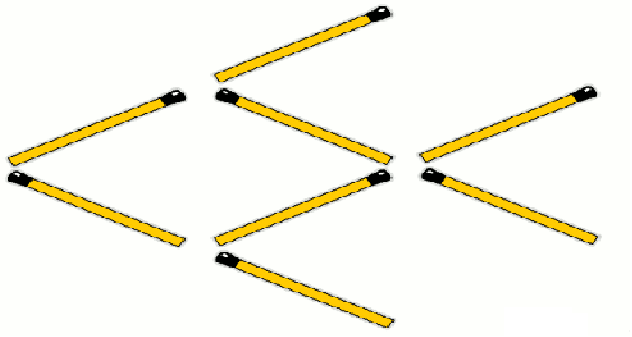
16) Pavan has 9 books. He buys 5 more books. How many books does he have in all?

17) Srinivas has 10 pencils. He finds 11 more pencils. How many pencils does he have in all?

18) Sumanth has 7 bags. Tom has 8 bags. How many bags do they have altogether?

19) Jhansi has 8 bags. Rudrama has 10 bags. How many bags do they have altogether?

20) John has 11 pens. He finds 10 more pens. How many pens does he have in all?



***TRY THIS**!!! Change any three match sticks, and make the fish, swim into opposite direction..*

7. SUBTRACTION OF ONE DIGIT NUMBERS

A. VERTICAL TYPE

2	8	9	8	8
-2	-2	-5	-7	-8
5	3	1	7	9
-5	-3	-1	-5	-2

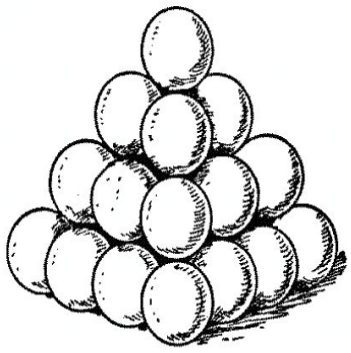
B.HORIZONTALTYPE

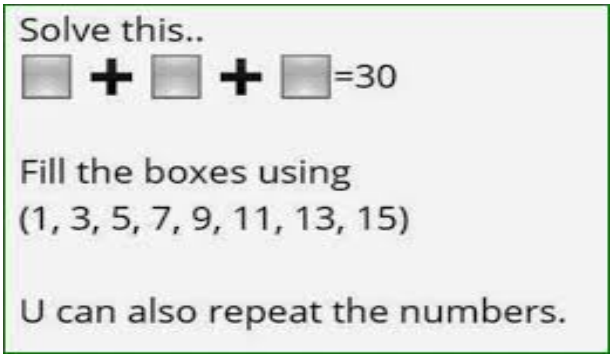
7-5=	2-2=	8-4=	8-8=	1-1=
3-1=	9-9=	7-3=	5-5=	4-4=
6-6=	7-2=	6-1=	5-5=	4-1=
7-4=	8-4=	6-3=	3-2=	8-4=

C. FILL THE BLANKS

_ -2=7	_____-2=3	7-__=5	_____-9=0	_____-5=4
_____-4=5	_____-2=3	_____-1=1	2-_____=1	2-_____=1
_____-4=1	_____-3=2	_____-2=0	_____-5=0	4-_____=0

- ***TRY THIS : HOW MANY LADDUS ARE THERE???***





8. SUBTRACTION OF TWO DIGIT NUMBERS

A. VERTICAL TYPE

60 -40	44 -32	16 -15	51 -31	42 -40
37 -23	70 -50	50 -40	55 -32	50 -10
62 -31	43 -11	89 -19	89 -58	33 -21
21 -10	66 -41	96 -64	36 -33	22 -12

B. HORIZONTAL TYPE

19-13=	73-52=	44-11=	48-25=	45-14=
33-13=	99-89=	83-12=	89-34=	57-37=
41-41=	79-77=	79-31=	46-43=	67-56=
23-13=	95-11=	19-13=	13-11=	17-14=

C. FILL THE BLANKS WITH SUITABLE NUMBERS

60-_____=40	_____-30=12	98-_____=41	86-_____=25	_____-30=36
69-_____=56	66-_____=50	16-_____=11	11-_____=0	63-_____=51
52-_____=51	_____-20=21	_____-10=88	80-_____=70	_____-80=7
61-_____=1	28-_____=12	_____-1=70	_____-46=52	15-_____=12
_____-14=2	86-_____=31	25-_____=7	92-_____=12	13-_____=0
31-_____=15	23-_____=3	37-_____=23	_____-10=3	40-_____=14

9. SUBTRACTION OF THREE DIGIT NUMBERS

A. VERTICAL TYPE

419 -202	448 -332	245 -225	191 -130	250 -210
402 -201	955 -253	970 -910	807 -103	843 -312
254 -111	608 -468	567 -435	420 -110	414 -114
124 -104	613 -612	518 -314	746 -512	232 -100

B. HORIZONTAL TYPE

478-311=	850-540=	472-172=	415-305=	354-233=
502-302=	638-305=	662-432=	121-21=	861-651=
584-223=	182-80=	375-322=	586-465=	295-104=
595-134=	452-321=	842-410=	265-115=	491-131=

C. FILL THE BLANKS WITH CORRECT NUMBERS

_____-115=411	631-_____=421	_____-500=200	_____-341=436	_____-40=404
455-_____=202	631-_____=331	_____-242=524	588-_____=345	_____-710=270
774-_____=423	306-_____=201	_____-403=405	_____-273=501	_____-111=206
800-_____=300	573-_____=272	908-_____=804	378-_____=153	407-_____=304
_____-348=110	984-_____=203	813-_____=663	632-_____=200	358-_____=245

10. SUBTRACTION OF FOUR DIGIT NUMBERS

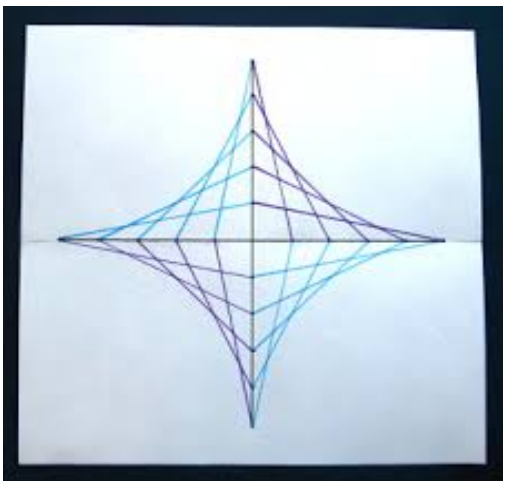
HORIZONTAL TYPE SUBTRACTIONS

4381-2201=	9492-4201=	8759-2105=	7012-992=	8727-7293=
9774-3292=	3349-2104=	4296-3103=	1774-1503=	6751-3701=
6236-1104=	5962-2602=	3483-3192=	7339-4204=	2430-1201=
5400-2200=	2061-1991=	2692-1701=	2144-1004=	1744-1202=

FILL THE BLANKS WITH CORRECT NUMBERS

4792-_____=2583	_____-3443=740	_____-4262=794	_____-4344=3644
7668-_____=3163	_____-3263=5218	8427-_____=4431	_____-5489=2426
_____-4720=115	_____-8446=749	_____-3997=1020	9702-_____=1100
_____-6098=1596	5790-_____=4030	3444-_____=2075	9078-_____=1289
1220-_____=53	_____-2102=7027	_____-1784=7875	_____-3631=2915

❖ ***WHAT IS THE SPECIALITY IN THESE FIGURES ?***



11. SUBTRACTION – SOME SPECIAL CASES

(Zero in units place/tens/ hundreds/…..)

330 -202	360 -116	270 -225	450 -310	250 -210
650 -273	940 -253	970 -910	840 -103	810 -302
540 -111	670 -468	560 -435	420 -110	410 -104
408 -202	404 -132	205 -125	901 732	507 -210
402 -201	905 -253	909 -870	807 -103	803 -312
504 -111	608 -468	607 -435	209 -110	404 -114
7360 -5101	2398 -94	9299 -3095	8002 -5992	7821 -4691
1287 -1004	7088 -5003	2360 -1101	5748 -3392	7076 -6006
5150 -4101	2115 --8	3238 -3094	7335 -5202	8301 -6991
2358 -2004	7962 -801	9663 -8192	2500 -2390	9290 -7090
7300 -5101	2300 -1294	9200 -3095	8900 -5992	7800 -4691
1200 -1004	7700 -5003	3600 -1101	5700 -3392	7600 -6006

5100 -4101	2100 --1253	3800 -3094	3500 -2020	8300 -6991
2300 -2004	7900 -1801	6300 -5192	2500 -2390	2900 -1090
7060 -5101	2098 -1194	9090 -3095	8020 -5992	7020 -4691
1080 -1004	7080 -5003	2060 -1101	5040 -3392	7070 -6006
5050 -4101	2010 --1848	3030 -2094	7030 -5202	3090 -6991
2050 -2004	7060 -1801	9060 -8192	2090 -1390	9090 -7090
7000 -5101	2000 -1494	9000 -3095	8000 -5992	8000 -4691
5000 -1004	6000 -5003	2000 -1101	5000 -3392	7000 -6006
5000 -4101	2000 --1368	3000 -2094	7000 -5202	8000 -6991

3	4	1	2
4	2	3	1

			3
3	2	4	
	4	3	2
2			

12. MIXED ADDITIONS AND SUBTRACTIONS

465 +554	974 +332	569 -362	292 +806	492 +155
904 -656	259 +699	480 -324	134 +384	526 -517
772 -499	504 -353	165 +729	969 +511	761 -614
839 +700	856 +211	214 +408	331 +679	367 +788
949 +223	937 -351	387 +989	146 -121	384 -375
2988 +3280	9528 -310	7902 -335	1581 +9940	1334 -102
1621 +3437	6607 -992	8614 -7374	6648 -5227	4522 -1368
9447 +1289	1969 -723	1536 -846	9452 -3981	5158 -409
2898 +3309	1668 +6847	1842 -444	9349 +2452	3000 -1405
4694 -273	4575 +4939	3694 +8233	4648 -3318	4473 -3410

SOLVE THIS!

A gardener planted 10 trees in five rows. Each row had four trees in it. How did he do this?

13. WORD PROBLEMS (+/-)

1) Ravi bought 6 bananas. He ate 5 bananas. How many does Ravi have now?

2) Syam has 6 bags. He buys 4 more bags. How many bags does he have in all?

3) Laxman bought 12 candies. He ate 10 candies. How many does he has now?

4) Siddu has 11 pencils. His brother takes away 4 of his pencils. How many pencils does Siddu have left?

5) Syam has 6 bags. Susheel has 5 bags. How many bags do they have altogether?

6) Tharun has 10 pencils. He finds 11 more pencils. How many pencils does he have in all?

7) Subbu has 11 pens. His brother takes away 2 of his pens. How many pens does Subbu have left?

8) Sirish has 9 pens. Sirish gives his sister 5 pens. How many pens does Sirish have ?

9) Joythi has 4 pencils. Samantha has 12 pencils. How many pencils do they have altogether?

10) Triveni has 7 bananas. Triveni ate 5 of them. How many bananas does Triveni have left?

11) Jevan has 7 books. He finds 12 more books. How many books does he have in all?

12) There are 12 boys and 3 girls in a library. How many kids are there altogether?

13) Swarup has 10 blocks. He buys 5 more blocks. How many blocks does he have in all?

14) Lokesh has 5 cups. He buys 10 more cups. How many cups does he have in all?

15) Nithin bought 8 candies. He ate 5 candies. How many does Nithin have now?

16) Nikhil has 4 pencils. Nikhil gives his sister 2 pencils. How many pencils does Nikhil have left?

17) Thomas has 10 pens. He buys 8 more pens. How many pens does he have in all?

18) Jeevan has 4 pencils less than Akhil. Akhil has 10 pencils. How many does Jeevan have?

19) There are 10 boys and 10 girls in a park. How many kids are there altogether?

20) There are 11 boys and 7 girls in a room. How many kids are there altogether?

CAN YOU MAKE THE SHAPE ?

14. MULTIPLICATION TABLES FROM 2 TO 10

Write the multiplication tables from 2 to 10

Ex: 2 X 0, 2X1, 2X2, 2X3, 2X4, 2X5 , 2X6, 2X7, 2X8, 2X9, 2X10, 2X11

0X2, 1X2, 2X2, 3X2, 4X2, 5X2, 6X2, 7X2, 8X2, 9X2, 10X2, 11X2... ...

15. MULTIPLICATION

A) MULTIPLICATION BY 1 DIGIT NUMBERS

98 x7	48 x8	65 x7	95 x5	99 x4	56 x2
16 x2	84 x10	70 x9	43 x1	82 x6	60 x10
22 x8	30 x2	26 x2	58 x3	91 x4	60 x0
80 x8	30 x4	20 x3	90 x2	40 x6	70 x7
50 x3	60 x7	40 x9	60 x3	20 x3	50 x2

B. MULTIPLICATION BY 2 DIGIT NUMBERS

8318 x18	3364 x40	3282 x4	8393 x30	9044 x36	3027 x47
5014 x31	6157 x17	8438 x39	2716 x33	5218 x3	2465 x2
9933 x36	4062 x46	1313 x33	3649 x42	1110 x48	1522 x22
6505 x24	4557 x43	8452 x24	7925 x7	5039 x19	2292 x46

703 x20	793 x50	781 x30	897 x70
501 x60	846 x80	755 x10	958 x40

C. MULTIPLICATION BY 3 DIGIT NUMBERS

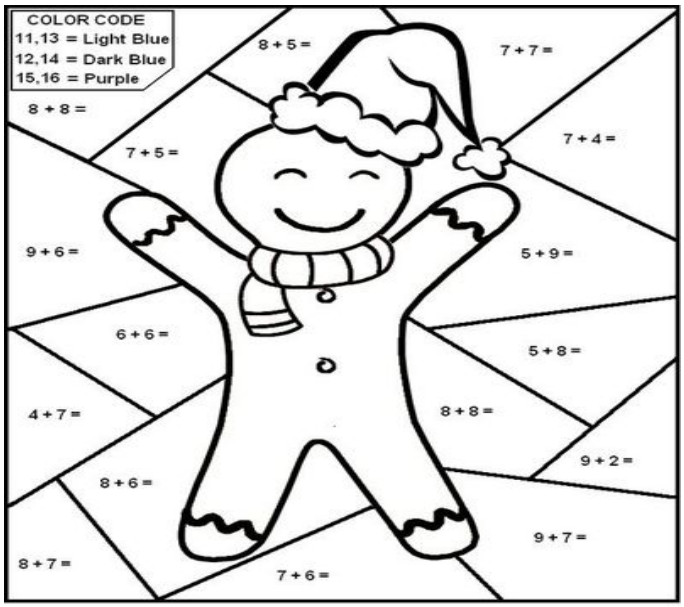
2501 x618	5846 x894	7557 x218	4958 x855
4067 x872	8507 x494	6756 x997	8529 x510
1385 x422	3567 x973	8306 x202	3355 x227
1173 x318	2613 x205	8711 x212	8724 x817
3376 x206	8290 x507	2407 x477	1240 x996

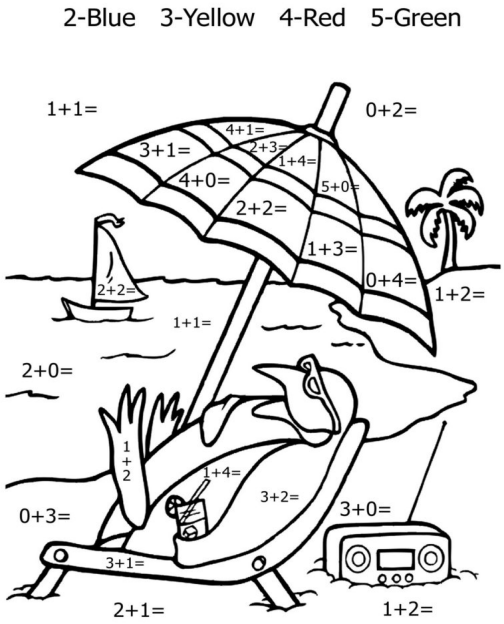
MISCELLENIOUS

205 x18	806 x84	705 x21	90 x55
406 x72	507 x49	506 x99	809 x10
805 x422	607 x273	306 x122	505 x227
4067 x806	8507 x404	6756 x907	8529 x506
1380 x422	3560 x973	8310 x252	3350 x227

1170 x318	2610 x215	8710 x214	8720 x817
3370 x220	8290 x540	2430 x470	1240 x990
2500 x610	5840 x890	7550 x210	4950 x850
4067 x800	8507 x400	6756 x900	8529 x500
1385 x300	3567 x900	8306 x200	3355 x200
1070 x318	2010 x255	8010 x212	8020 x817
3070 x246	8090 x537	4070 x477	1040 x996

COLOUR THE PICTURES AS SHOWN.





16. WORD PROBLEMS – MULTIPLICATION

1. Ramesh buys 6 LCD TVs. The cost of each TV is Rs.259. What is the cost of 6 LCD TVs?
2. The cost of each book is Rs 3. What is the cost of 6 books?
3. A bag contains 7 balls. How many balls are there in 8 bags?
4. Sony buys 6 t-shirts that cost Rs 35 per t-shirt. How much does she spend for t-shirts?
5. Sampath maintains her own library at home. She equally distributes her books on 8 shelves. If there are 27 books on a shelf, how many books does she have?
6. A broken scale measures 6 inches. Ramya uses the broken scale to measure the length of a rope. The rope is 35 times longer than the broken scale. Find the length of the rope.
7. A bolt manufacturing company packs 750 bolts in a carton. How many bolts are there in 8 cartons?
8. Ravi plans a field trip to New Jersey. He rents a room in a hotel at a cost of Rs.219 per day. If he stays in the hotel for 1 week, how much does he need to pay?
9. James works as carpenter for a chair manufacturing company. He earns Rs.450 per week. How much does he earn in 4 weeks?
10. Madhu uses the computer for 12 hours. If the average power consumption of a computer per hour is 299 watt, how much power does Madhu use?
11. Thomson bolt manufacturing company packs 599 bolts into each carton. How many bolts are needed to pack 59 cartons?
12. A broken scale reads 11 inches. Karunakar uses the broken scale to measure the length of a rope. She finds the length of the rope is 113 times the length of the broken scale. Find the length of the rope.
13. A teacher arranges students in a prayer hall in 13 rows and 19 columns. The arrangements are in a perfect rectangular array. Find the number of students in a prayer hall.
14. 34 dogs participated in a dog show. The participation fee for each dog is Rs.97. Find the amount collected for the participation fee.
15. A mechanic takes 17 hours to assemble a car. How long does he take to assemble 15 cars?
16. Monika collected 45 stamps in each box. She has 13 such boxes. What is the total number of stamps she collected?
17. Students are taken to a field trip in 13 buses. Each bus can accommodate 15 students. If all buses are completely filled, what is the number of students who participated in the field trip?
18. Sumanth receives Rs.1525 as a scholarship in a year. How much does he receive as scholarship in 3 years?
19. A bolt manufacturing company packs 1550 bolt in each carton. Find the number of bolts in 8 cartons?
20. Mamatha runs 5032 meters in 1 hour. If she runs at this rate, how far does she run in 4 hours?

17. DIVISION

A. DIVISION BY 1 DIGIT NUMBER

3) 6	6) 6	4) 8	5) 5
8) 8	7) 7	7) 7	9) 9
7) 7	2) 8	8) 8	5) 5
3) 9	3) 9	2) 8	4) 8
6) 6	4) 8	1) 9	3) 9

5) 70	9) 45	3) 27	7) 77
7) 7	5) 15	6) 42	8) 8
1) 78	1) 59	5) 40	10) 60
2) 96	1) 67	3) 99	4) 76
8) 440	10) 870	8) 352	8) 624
4) 100	3) 168	9) 450	1) 740
8) 248	7) 252	1) 667	8) 520

B. DIVISION BY 2 DIGIT NUMBER

10) 680	13) 444	15) 887	8) 176
81) 810	68) 136	73) 219	36) 288
24) 984	43) 473	16) 96	84) 672
24) 816	80) 720	30) 120	19) 399

52) 416	15) 555	12) 348	38) 646
13) 3137	10) 9914	32) 9866	41) 6864
13) 3378	25) 1706	35) 1034	23) 2456
12) 8107	28) 3087	43) 9621	23) 9803
31) 2998	16) 6702	33) 6445	25) 2374

C. DIVISIONS OF SOME SPECIAL CASES (0 IN UNITS/TENS/HUNDREDS .. OF DIVIDEND/DIVISOR

2) 20	5) 10	5) 50	5) 40
5) 70	9) 90	3) 30	7) 70
6) 60	5) 10	4) 40	8) 80
2) 708	5) 509	5) 405	10) 600
2) 906	3) 607	9) 909	4) 706
8) 440	10) 870	8) 350	8) 620
4) 100	3) 160	9) 450	1) 740
8) 2080	7) 2020	3) 6070	8) 5020
4) 3840	6) 4620	1) 7620	4) 4080
10) 6800	3) 4440	1) 8870	8) 1760
80) 810	60) 136	70) 219	30) 288
20) 9840	40) 4730	60) 9600	80) 6720
20) 8160	80) 7200	30) 1200	50) 3990

18. WORD PROBLEMS – DIVISION

1. Sahana bought 8 chocolates and gave 2 chocolates to each of her friends. How many friends did she give chocolate to?
2. Ganesh saved 9 dollar in a piggy bank in 3 days. If he saved equal amount of money in each day, find the number of dollars he saved in one day.
3. Mahesh won two games and scored 4 points. She scored the same number of points in each game. How many points did she score in each game?
4. A monkey eats 6 apples in 3 days. How many apples does it eat in a day?
5. Keerty drinks 8 cups of milk in 4 days. How many cups does she drink in a day?
6. Balu bought three pairs of shoes for Rs.90. What is the cost of each pair of shoes?
7. Charan bought 64 candies and gave 4 candies to everyone in his class. How many students are in Charan class?
8. Kamal formed 7 equal groups out of 42 students. Find the number of students in each group.
9. Sheela collected 60 coins and equally distributes them in 4 boxes. Find the number of coins in each box.
10. Arun ordered 7 cakes. He paid Rs.315. What is the cost of each cake?
11. The maintenance charge collected from 8 houses is Rs.120. What is the maintenance charge per house?
12. Sony digital company sends announcements to the employees by email. 6 Sony executives sent emails to 324 employees. What is the number of emails sent by each executive?
13. A florist made 210 Bouquets in 5 days. How many Bouquets did the florist make in a day?

19. TABLES (frenzy)

+	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

—	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

X	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

X	*11*	22	33	44	55	66	77	88	99	100
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

20. NUMBER SENSE

1. Write the numbers between the following numbers.
   a. 1 and 20 b. 150 and 195 c. 515 and 578
2. Write the given numbers in ascending order. 5,11,6,9,8,10,7
3. How many numbers are there between the following numbers?
   a. 11,18 b. 100 , 109 c. 375, 470
4. How many digits are there in 879 ?
5. Write the smallest and greatest one digit numbers.
6. Write the smallest and greatest two digit numbers.
7. Write the smallest and greatest three digit numbers.
8. Write all the numbers which are formed by digits 5,2,1.
   Write smallest and greatest among them.
9. Write the smallest and greatest four digit number.
10. Write the following given numbers in words.
    a. 51 b. 105 c. 990 d. 9644 e.60780 f. 54001 g. 630860

    h. 909009 i. 840006 j. 56043732 k. 692046001 l.13047265

11. Write the following numbers in numerical form

    a. three hundred threeb. Fifty five c. Six hundred six (d) Six thousand six
    e. twenty one thousand four hundred and seven f. Seventy thousand seventy
    g. Six lakhs thirty thousand two hundred twenty six h. Fifteen lakhs and one

12. Write the numbers in short/compact form.

10+9	200+20+5	800 +0+0	0+10+5	3000+500+10+7
90000+400+9	20000+5000+700+8	70000+700+70+7	8000+400+10	100+1000+10+8
8000+700+90	200000+8000+90+8	90000+100+70+7	800+40+9	700+2000+50+4

13. Write the given numbers in expanded form.

20	219	909	86001	307632
8099630	77777	1008	6000	1000789

14. Write the place value and face value of 4 in the following numbers?

417	714	410078	9164	100489

15. Write the following numbers in ascending/descending order.

3,2,5,7,8	94,99,98,96,93	19,25,17,23,18	517, 571,751,175	90+9,10+7,80+8, 23, 40+9
2754,3620,4730, 1508	86001,86670,80670, 87608	425435, 962857, 307362, 944751,	9902729, 8099630, 793563	**Two hundred six, two hundred sixty, six hundred twenty two, six hundred two**

16. Write the next four numbers.

a. 2,4,6,8,... b. 3,6,9,... c. 10,20,30,... d. 50,100,150,...

e. 401, 501, 601, 701,... f. T9wenty five , thirty one, thirty six,....

17. Write the even and odd numbers between 50 and 80.

18. Tick the odd numbers from the following numbers.

0, 2,3,13,14	4,5,17,8,9	14,19,21,25,23	15, 19,118,46,59	605,614,115, 218,908

19. Tick the even numbers from the following numbers.

0, 2,3,13,14	4,5,17,8,9	14,19,21,25,23	15, 19,118,46,59	605,614,115, 218,908

20. Rounding off the numbers.

a) Round off the numbers to the nearest tens.

81	27	3952	4409	9415

b) Round off the numbers to the nearest hundreds.

272	315	23468	93617	96182

c) Round off the numbers to the nearest thousands.

9600	4001	8765	7452	70124

21. MULTIPLES

Write the multiplication tables in the given table.

0 table	*1 table*	*2 table*	*4table*	*7 table*	*9 table*	*6 table*	*10 table*	*11table*	*21able*
13table	*15table*	*17table*	*5 table*	*3 table*	*18table*	*8table*	*12table*	*20table*	*30table*

A. Write the first ten multiples of the following numbers.

2 5 7 9 13 10 27 20

b. How many multiples can a number have?

c. How many numbers are there having 1 as a multiple?

d. Write the numbers which are having 100 as a multiple.

e. Is **46** a multiple of 12?

f. Is **18** a multiple of 3?

g. Is **29** a multiple of 4?

22. DIVISIBIITY RULES

1. Revise the divisibility rules of 2,3,4,5,6,8,9,10,11

2. Determine if the numbers below which are divisible by 2, 3, 4, 5, 6, 7, 8, 9, 10 ?

NUMBER	BY 2	DIGIT SUM OF THE NUMBER	BY 3	BY 4	BY 5	BY 6	BY 8	BY 9	BY 10	BY 11	Number Divisible by
1248	Y	15	Y	Y	N	Y	Y	N	N	N	2,3,4,6,8
15											
16											
27											
28											
36											
93											
102											
144											
168											
256											
450											
549											
1470											
4518											
7120											
479											

Fill in the smallest digit to make the number divisible by:

(i) by 5 : 7164__, 32197__ (ii) by 3 : 1__43, 47__05, __316

(iii) by 6 : __428, 9__52, 721__ (iv) by 4 : 2462__, 91__ __, 670__

23. LEAST COMMON MULTIPLE

Find Least Common Multiple (LCM) for each number set.

1) 13 and 12 =

lcm:

2) 15 and 20 =

lcm:

3) 15 and 10 =

lcm:

4) 12 and 13 =

lcm:

5) 12 and 18 =

lcm:

6) 18 and 18 =

lcm:

7) 18 and 16 =

lcm:

8) 10 and 13 =

lcm:

155 , 196 and 170 =

lcm:

11 , 161 and 125 =

lcm:

13 and 154 =

lcm:

59 , 161 and 140 =

lcm:

132 , 18 and 171 =

lcm:

181 and 132 =

lcm:

148 , 53 and 77 =

lcm:

153 , 45 and 191 =

lcm:

178 and 159 =

lcm:

110 , 162 and 86 =

lcm:

216 , 192 and 181 =

lcm:

243 , 356 and 175 =

lcm:

24. FACTORS - GCF

1. Write all the factors of the numbers 1 to 50.

2. Write all the factors of the given numbers. 64 150 225 72 121 100

3. Fill the table given below for the numbers up to 100

Numbers	Product forms	Factors	Number of factors	Prime/composite
2				
3				
4	1 x4 2x2	1,2,4	3	
5				

4. write the prime numbers between 1 to 100 from the above table.

5. Write the composite numbers between 1 to 100.

6. Write all twin primes between 1 to 100.

7. Write any five pairs of relative primes.

8. Write the following numbers as the product of prime factors.

18 24 192 256 58 150 35 128 100 1024

9. Write all the common factors of the following.

16,20	12,16,20	10,15	36, 72	10,30,50
12,16,14	10,24,25	15,25,40	18,27,54	102,119,153

10. Find the greatest common factor/highest common factors of the following.

(368, 552)= ___ (594, 990) = ___ (784, 294) = ___ (744, 930) = ___

(792, 880) = ___ (384, 288) = ___ (880, 264) = ___ (288, 480) = ___

(891, 297) = ___ (552, 736) = ___ (500, 300) = ___ (470, 282) = ___

(480, 192) = ___ (194, 291) = ___ (276, 368) = ___ (273, 637) = ___

(644, 736) = ___ (264, 352) = ___ (970, 388) = ___ (686, 392) = ___

*25. BODMAS RULE (*Order of Operations)

Simplify:

7 × (9 + 3) × 1	62 + 5 × 12 ÷ 2	90 - 40 + 40 x 2	24 ÷ 2 + 5
75 + 25 – 10 ÷ 5	1 + 5 × 9 ÷ 9	24 – 2 x 5	(81 × 2) - 4
5(10 + 10) ÷ 10	(88 + 5) + 15 × (3 - 1)	47 - 27 + 5^2 x 2	3 (15+ 25) + 35 ÷ 7
90 - 1 × 2 + 7	12 + 60 ÷ 6 × 52	56 ÷ 8 × 4 x 0	12 + (12 ÷ 4) - 3
(8 + 2) - 50 + 5 x 2	100 x 4 - 25 x 2	(50 + 5) × 2 – 5 x 2	9^2 - 5 × 12

Try this:

Arrange these numbers so that they answer the questions below:

4 3 6 7 5 2

Largest possible number _____

2. Smallest possible number_____

3. Largest even number_____

4. Smallest even number_____

5. Largest odd number_____

6. Smallest odd number_____

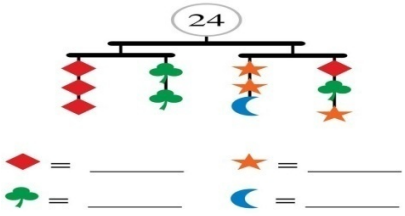
7. Largest number divisible by 5 _____

8. Smallest number divisible by 5 _____

9. Largest number divisible by 3 _____

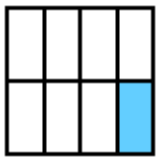
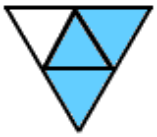
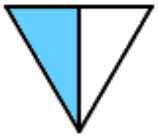
10. Smallest number divisible by 3 _____

TRY THIS....



26. FRACTIONS

Write a fraction to show how much of the shape is shaded. And Write the fraction that is not shaded.

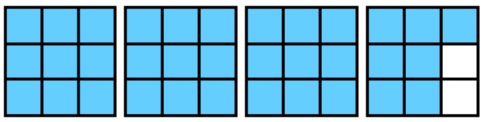
1. 	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 
10. 	11. 	12. 
13. 	14. 	15. 
16. 	17. 	18. 

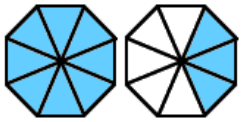
Draw a picture to show the fraction.

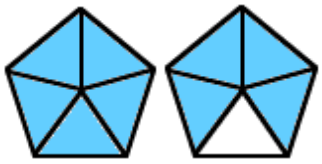
eight-tenths	$\frac{2}{5}$	one-half	$\frac{3}{7}$	$\frac{4}{9}$
five-eighths	five-sixths	$\frac{3}{4}$	**4/7**	**6/11**

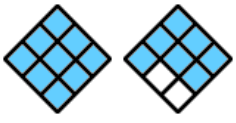
27. MIXED FRACTIONS

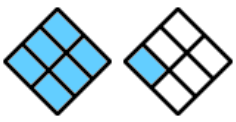
Write as a mixed fraction and improper fraction for the parts that are shaded.





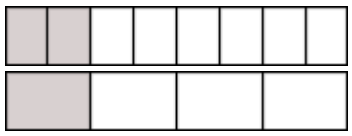






28.EQUAL FRACTIONS

Fill in the missing number to make two equal fractions.

1. 

$\frac{2}{8} = \frac{\square}{4}$

2. 

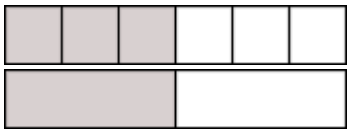
$\frac{\square}{10} = \frac{3}{5}$

3. 

$\frac{\square}{3} = \frac{6}{9}$

4. 

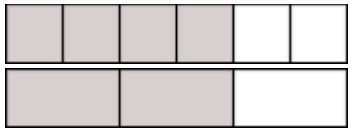
$\frac{1}{2} = \frac{\square}{4}$

5. 

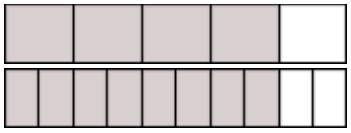
$\frac{3}{6} = \frac{\square}{2}$

6. 

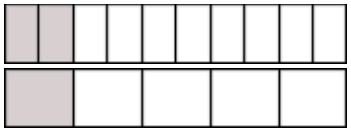
$\frac{3}{4} = \frac{\square}{8}$

7. 

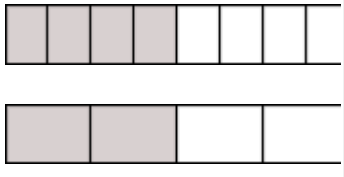
$\frac{\square}{6} = \frac{2}{3}$

8. 

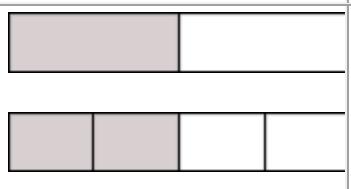
$\frac{\square}{5} = \frac{8}{10}$

9. 

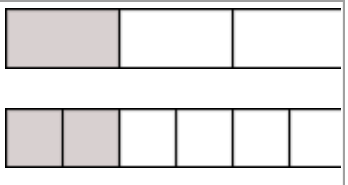
$\frac{\square}{10} = \frac{1}{5}$

10. 

$\frac{4}{8} = \frac{\square}{4}$

11. 

$\frac{\square}{2} = \frac{2}{4}$

12. 

$\frac{1}{3} = \frac{\square}{6}$

Write the missing numerators.

1) $\frac{2}{3} = \frac{?}{6}$ 2) $\frac{4}{5} = \frac{?}{45}$ 3) $\frac{1}{6} = \frac{?}{24}$ 4) $\frac{1}{6} = \frac{?}{66}$

5) $\frac{1}{6} = \frac{?}{24}$ 6) $\frac{5}{18} = \frac{?}{108}$ 7) $\frac{6}{7} = \frac{?}{42}$ 8) $\frac{2}{5} = \frac{?}{5}$

9) $\frac{1}{4} = \frac{?}{24}$ 10) $\frac{3}{5} = \frac{?}{50}$ 11) $\frac{2}{6} = \frac{?}{18}$ 12) $\frac{1}{6} = \frac{?}{54}$

13) $\frac{2}{14} = \frac{?}{56}$ 14) $\frac{3}{5} = \frac{?}{10}$ 15) $\frac{2}{8} = \frac{?}{16}$ 16) $\frac{1}{8} = \frac{?}{48}$

29. IMPROPER – MIXED FRACTIONS

Convert each improper fraction to mixed number or whole number.

$\frac{9}{8} =$ $\frac{8}{3} =$ $\frac{17}{2} =$ $\frac{17}{6} =$

$\frac{9}{4} =$ $\frac{7}{6} =$ $\frac{8}{5} =$ $\frac{5}{2} =$

$\frac{10}{7} =$ $\frac{13}{6} =$ $\frac{19}{6} =$ $\frac{9}{8} =$

$\frac{9}{5} =$ $\frac{11}{8} =$ $\frac{17}{5} =$ $\frac{11}{4} =$

Convert each mixed number to improper fraction.

$2\frac{6}{17} =$ $2\frac{5}{9} =$ $6\frac{7}{12} =$ $2\frac{4}{5} =$

$9\frac{6}{7} =$ $6\frac{1}{12} =$ $5\frac{7}{13} =$ $9\frac{6}{19} =$

$6\frac{3}{10} =$ $7\frac{4}{19} =$ $4\frac{6}{11} =$ $8\frac{9}{11} =$

30. COMPARING FRACTIONS

Compare the fractions, and write >, < or = in the box.

1 a. $\frac{4}{6} \square \frac{12}{12}$	1 b. $\frac{6}{9} \square \frac{6}{9}$	1 c. $\frac{10}{10} \square \frac{6}{6}$
2 a. $\frac{12}{12} \square \frac{10}{11}$	2 b. $\frac{7}{7} \square \frac{8}{8}$	2 c. $\frac{7}{11} \square \frac{9}{11}$
3 a. $\frac{11}{12} \square \frac{10}{12}$	3 b. $\frac{3}{3} \square \frac{3}{6}$	3 c. $\frac{5}{6} \square \frac{8}{8}$
4 a. $\frac{1}{11} \square \frac{1}{6}$	4 b. $\frac{1}{11} \square \frac{6}{11}$	4 c. $\frac{1}{2} \square \frac{8}{11}$
5 a. $\frac{2}{9} \square \frac{2}{2}$	5 b. $\frac{1}{12} \square \frac{2}{12}$	5 c. $\frac{6}{7} \square \frac{6}{6}$
6 a. $\frac{2}{9} \square \frac{1}{2}$	6 b. $\frac{5}{11} \square \frac{1}{2}$	6 c. $\frac{2}{3} \square \frac{2}{5}$
7 a. $\frac{2}{8} \square \frac{1}{2}$	7 b. $\frac{1}{1} \square \frac{9}{9}$	7 c. $\frac{11}{11} \square \frac{4}{10}$
8 a. $\frac{7}{7} \square \frac{3}{10}$	8 b. $\frac{5}{5} \square \frac{10}{12}$	8 c. $\frac{7}{10} \square \frac{1}{2}$

Order the Fractions from least to greatest (Ascending order).

$\frac{7}{13}, \frac{9}{17}, \frac{6}{11} =$

$\frac{6}{11}, \frac{3}{16}, \frac{8}{13} =$

$\frac{8}{9}, \frac{4}{9}, \frac{4}{9}, \frac{2}{11}, \frac{5}{13} =$

$\frac{4}{15}, \frac{7}{19}, \frac{9}{10}, \frac{4}{11}, \frac{4}{15} =$

$\frac{4}{13}, \frac{5}{7}, \frac{3}{10} =$

$\frac{4}{9}, \frac{9}{11}, \frac{4}{7}, \frac{3}{5} =$

$\frac{6}{19}, \frac{4}{17}, \frac{7}{12}, \frac{5}{13} =$

$\frac{5}{18}, \frac{9}{19}, \frac{4}{15}, \frac{7}{13} =$

$\frac{8}{13}, \frac{5}{12}, \frac{2}{13}, \frac{7}{15}, \frac{2}{13} =$

$\frac{7}{16}, \frac{2}{19}, \frac{5}{12}, \frac{2}{9} =$

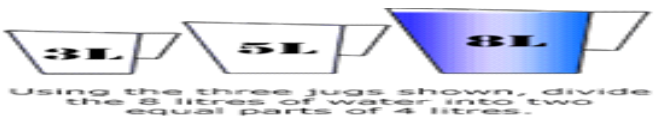
$\frac{2}{3}, \frac{7}{19}, \frac{4}{17}, \frac{6}{13} =$

$\frac{9}{13}, \frac{8}{13}, \frac{1}{9} =$

$\frac{5}{18}, \frac{7}{12}, \frac{1}{16}, \frac{8}{11} =$

$\frac{5}{18}, \frac{6}{13}, \frac{9}{19}, \frac{9}{13} =$

$\frac{5}{13}, \frac{7}{10}, \frac{2}{17}, \frac{8}{9}, \frac{6}{13} =$



Using the three jugs shown, divide the 8 litres of water into two equal parts of 4 litres.

TRY THIS !!

31. SIMPLIFICATION OF FRACTIONS

WRITE THE FOLLOWING FRACTIONS IN SIMPLEST FORM:

1) $\frac{10}{24} =$ 2) $\frac{12}{40} =$ 3) $\frac{20}{36} =$ 4) $\frac{20}{65} =$

5) $\frac{9}{51} =$ 6) $\frac{12}{33} =$ 7) $\frac{1}{7} =$ 8) $\frac{9}{30} =$

9) $\frac{15}{54} =$ 10) $\frac{3}{17} =$ 11) $\frac{10}{75} =$ 12) $\frac{12}{28} =$

13) $\frac{4}{18} =$ 14) $\frac{2}{10} =$ 15) $\frac{8}{14} =$ 16) $\frac{20}{56} =$

17) $\frac{4}{20} =$ 18) $\frac{5}{25} =$ 19) $\frac{8}{26} =$ 20) $\frac{10}{26} =$

Add Fractions.

1) $\frac{4}{6} + \frac{5}{6} =$ 2) $\frac{1}{8} + \frac{4}{8} =$ 3) $\frac{2}{5} + \frac{2}{15} =$ 4) $\frac{7}{8} + \frac{1}{4} =$

5) $\frac{7}{8} + \frac{4}{8} =$ 6) $\frac{2}{3} + \frac{2}{6} =$ 7) $\frac{1}{5} + \frac{5}{10} =$ 8) $\frac{4}{6} + \frac{2}{6} =$

9) $\frac{1}{4} + \frac{5}{6} =$ 10) $\frac{7}{12} + \frac{7}{8} =$ 11) $\frac{7}{8} + \frac{7}{12} =$ 12) $\frac{3}{20} + \frac{4}{20} =$

13) $\frac{1}{6} + \frac{4}{6} =$ 14) $\frac{2}{5} + \frac{7}{15} =$ 15) $\frac{1}{8} + \frac{4}{16} =$ 16) $\frac{4}{6} + \frac{5}{8} =$

Subtract Fractions.

1) $\frac{4}{5} - \frac{6}{10} =$ 2) $\frac{4}{6} - \frac{1}{2} =$ 3) $\frac{4}{6} - \frac{4}{8} =$ 4) $\frac{3}{5} - \frac{3}{15} =$

5) $\frac{4}{5} - \frac{1}{5} =$ 6) $\frac{8}{12} - \frac{1}{2} =$ 7) $\frac{6}{7} - \frac{3}{7} =$ 8) $\frac{8}{9} - \frac{4}{6} =$

9) $\frac{6}{8} - \frac{3}{12} =$ 10) $\frac{7}{9} - \frac{5}{9} =$ 11) $\frac{6}{7} - \frac{1}{7} =$ 12) $\frac{6}{7} - \frac{1}{7} =$

13) $\frac{3}{4} - \frac{3}{8} =$ 14) $\frac{2}{5} - \frac{1}{5} =$ 15) $\frac{2}{10} - \frac{4}{30} =$ 16) $\frac{9}{15} - \frac{1}{5} =$

17) $\frac{1}{4} - \frac{5}{20} =$ 18) $\frac{3}{8} - \frac{2}{8} =$ 19) $\frac{1}{4} - \frac{2}{8} =$ 20) $\frac{2}{6} - \frac{2}{12} =$

Multiply Fractions.

1) $\frac{7}{20} \times \frac{8}{10} =$ 2) $\frac{3}{5} \times \frac{6}{20} =$ 3) $\frac{3}{8} \times \frac{7}{8} =$ 4) $\frac{1}{6} \times \frac{4}{6} =$

5) $\frac{1}{16} \times \frac{8}{16} =$ 6) $\frac{2}{6} \times \frac{4}{6} =$ 7) $\frac{4}{7} \times \frac{3}{4} =$ 8) $\frac{5}{14} \times \frac{1}{28} =$

9) $\frac{1}{8} \times \frac{7}{8} =$ 10) $\frac{6}{8} \times \frac{4}{8} =$ 11) $\frac{1}{2} \times \frac{4}{6} =$ 12) $\frac{4}{9} \times \frac{7}{9} =$

13) $\frac{5}{20} \times \frac{6}{20} =$ 14) $\frac{5}{30} \times \frac{4}{10} =$ 15) $\frac{4}{5} \times \frac{5}{15} =$ 16) $\frac{3}{10} \times \frac{2}{5} =$

17) $\frac{3}{21} \times \frac{2}{3} =$ 18) $\frac{3}{12} \times \frac{7}{8} =$ 19) $\frac{2}{20} \times \frac{4}{5} =$ 20) $\frac{7}{20} \times \frac{3}{30} =$

Divide Fractions.

1) $\frac{1}{6} \div \frac{5}{6} =$ 2) $\frac{4}{9} \div \frac{1}{6} =$ 3) $\frac{2}{12} \div \frac{2}{8} =$ 4) $\frac{1}{4} \div \frac{2}{5} =$

5) $\frac{1}{6} \div \frac{2}{9} =$ 6) $\frac{5}{20} \div \frac{2}{10} =$ 7) $\frac{1}{2} \div \frac{7}{8} =$ 8) $\frac{3}{14} \div \frac{1}{4} =$

9) $\frac{9}{10} \div \frac{2}{5} =$ 10) $\frac{4}{10} \div \frac{7}{15} =$ 11) $\frac{1}{5} \div \frac{9}{15} =$ 12) $\frac{2}{3} \div \frac{3}{18} =$

13) $\frac{8}{12} \div \frac{6}{12} =$ 14) $\frac{6}{15} \div \frac{2}{5} =$ 15) $\frac{1}{6} \div \frac{5}{6} =$ 16) $\frac{5}{8} \div \frac{1}{8} =$

17) $\frac{2}{5} \div \frac{2}{15} =$ 18) $\frac{2}{8} \div \frac{5}{8} =$ 19) $\frac{5}{6} \div \frac{3}{4} =$ 20) $\frac{1}{2} \div \frac{7}{12} =$

32. DECIMALS

CONVERT THE FOLLOWING INTO DECIMAL FORM.

$\frac{1}{10}$ $\frac{8}{10}$ $\frac{7}{100}$ $\frac{9}{1000}$ $\frac{23}{10}$ $\frac{237}{100}$ $\frac{1234}{1000}$ $\frac{2349}{100}$ $\frac{375}{1000}$ $\frac{23412}{1000}$

CONVERT THE FOLLOWING INTO FRACTION FORM.

0.1 0.02 0.005 0.35 0.035 0.50 2.6 12.7 0.003 100.5 20.001 123.01

DECIMALS ADDITION / SUBTRACTION

11.907 +3.224	4.428 +9.197	6.443 +5.167	4.826 +7.784	2.755 -1.086
0.961 -0.961	0.843 +8.744	0.985 +7.371	5.965 +5.549	1.911 +3.894
5.430 -4.503	2.072 -1.214	3.037 -1.914	5.865 -2.403	4.725 -1.674
7.216 -5.928	8.609 +6.748	3.734 -2.683	2.082 +3.272	2.415 -2.277
10.789 +6.683	10.664 +4.397	11.155 +8.691	2.636 -2.524	2.161 -1.458
3.612 -1.939	8.944 -6.238	10.431 -2.934	2.514 +5.035	9.552 +7.560

- 13 + 1.85 + 3.52 - 2.01 + 551.2
- 1.2- 1.22 +1.222 +1.2222
- 6 + 2.676 + 20.82 – 6.93
- 16 + 0.639 – 6 + 0.006

9.372 +26.3 -5.08 +4.91

0.005 +0.07+0.37 – 0.17

117 +1.367 – 0.07 +5.08

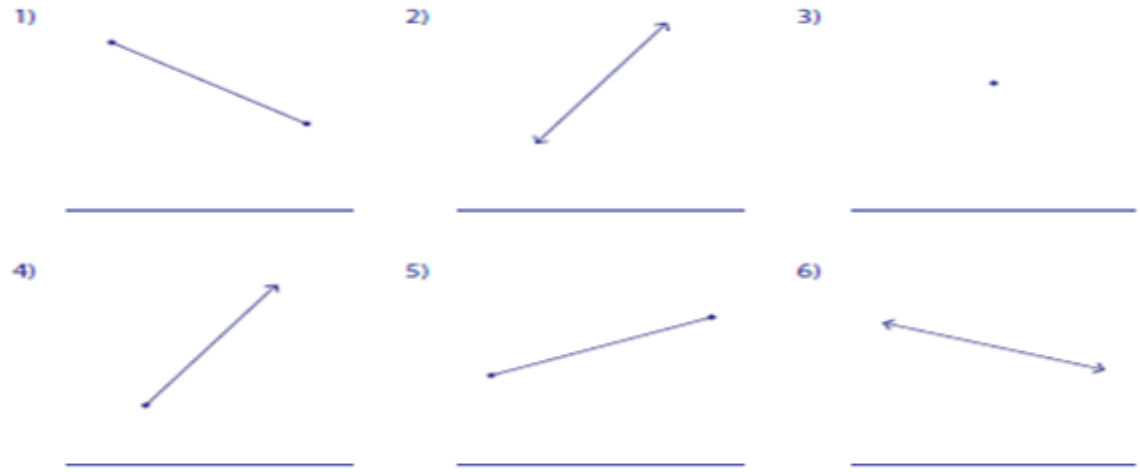
0.362 + 12.1 + 170.26

MULTIPLICATIONS

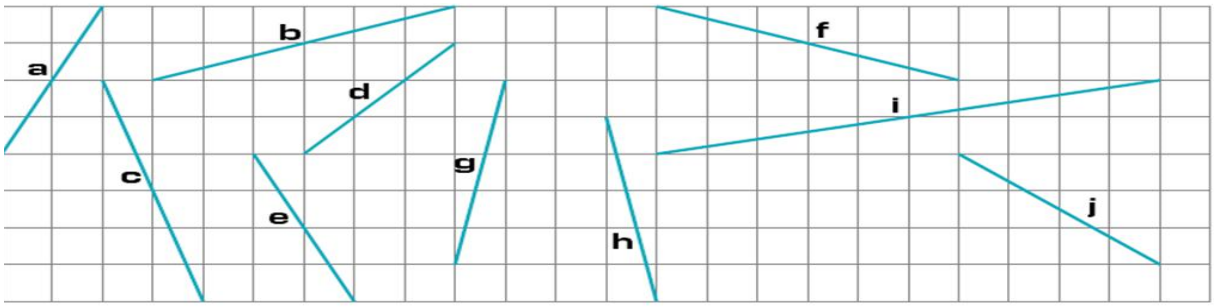
0.42 X 11	2.141 X 13	2.69 X 15	2.79 X 10	7.813X 5
5.64 X 100	7.13 X 1000	2.02 X 1000	3.12 X 10000	0.018 X 10
3.5 X 1000	11.54 X 3.2	215.67 X 3.15	0.156 X 367	1.3 X 1.9 X 0.4

33. BASIC GEOMETRY

A. Identify the point, line segment, ray from the following and name them.

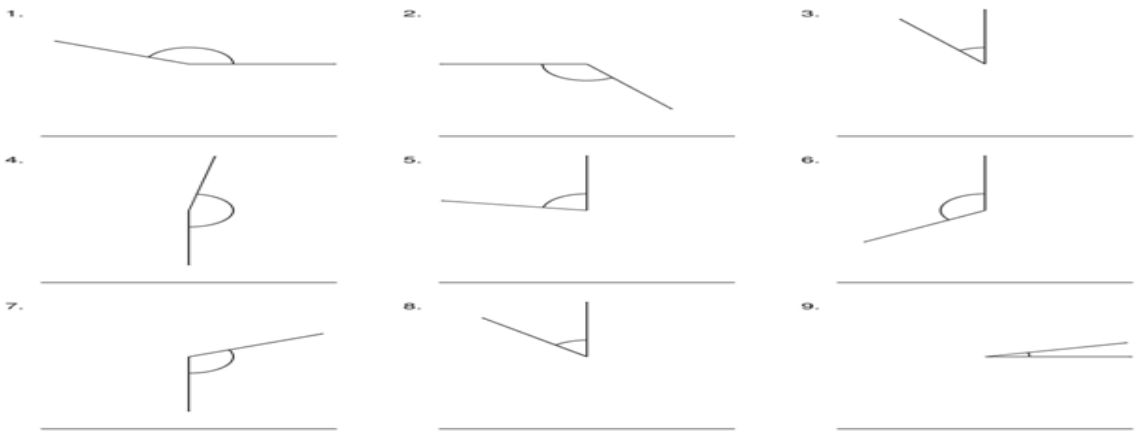


B. Measure the line segment with scale. Verify them using divider.



C. Draw the line segments with measures 3 cm, 4.3 cm, 6 cm, 7.1 cm, 8.2 cm. And name them

D. Measure the angles, and name them.



D. Draw the angles with measures 30^0, 45^0, 50^0, 60^0, 72^0, 150^0, 210^0, 195^0

E. Write the type of angle Acute / Obtuse/ Right.

1) _____ 6) _____

2) _____ 7) _____

3) _____ 8) _____

4) _____ 9) _____

5) _____ 10) _____

11) 84° _____ 16) 166° _____

12) 89° _____ 17) 90° _____

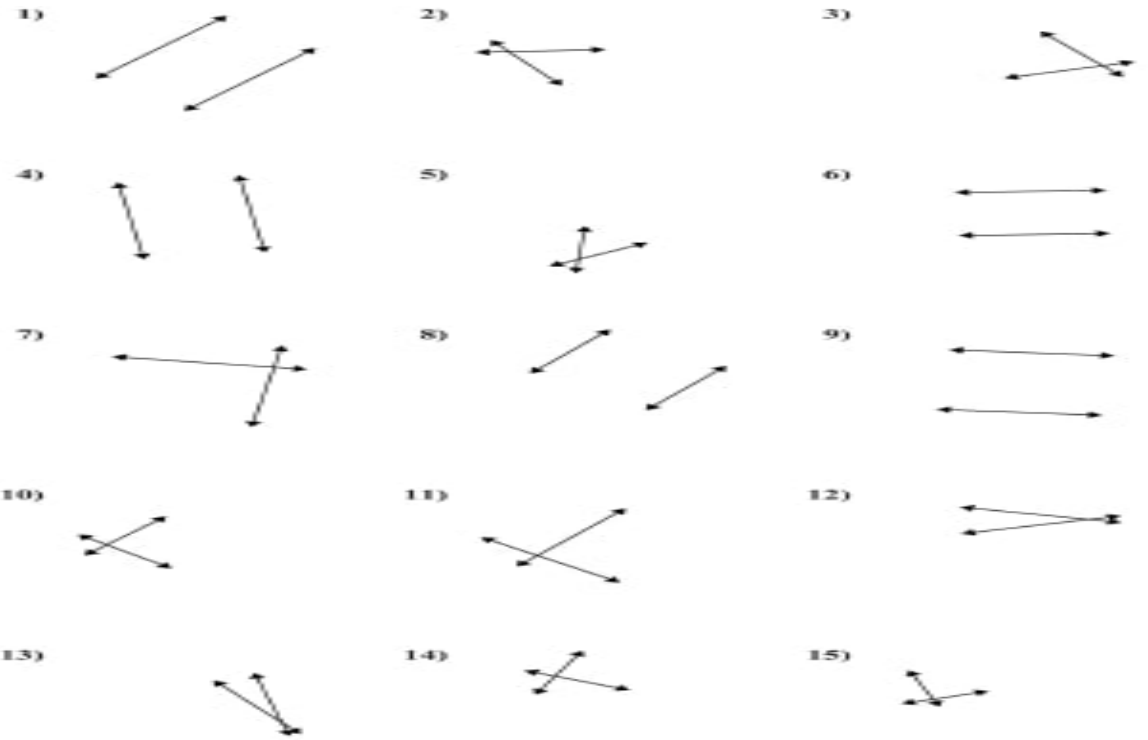
13) 25° _____ 18) 125° _____

14) 50° _____ 19) 149° _____

15) 180° _____ 20) 106° _____

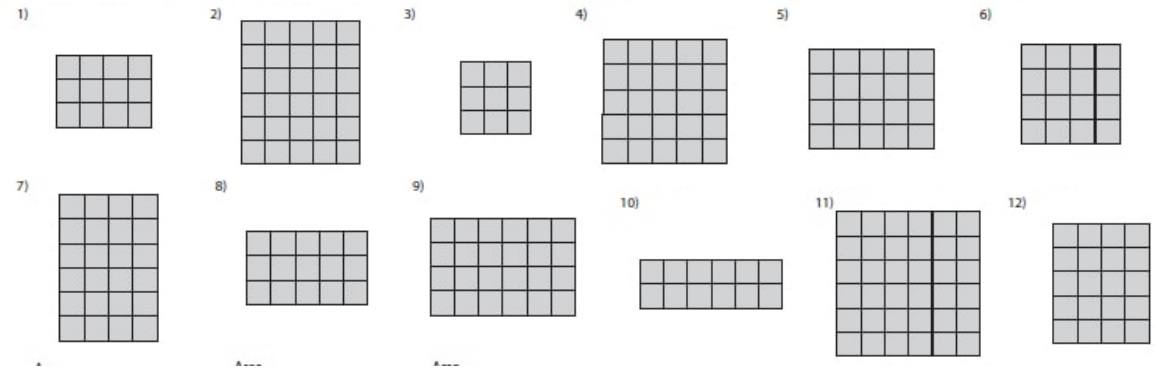
F. Which of the following are Parallel, Intersecting or Perpendicular Lines.

Write them using symbols.



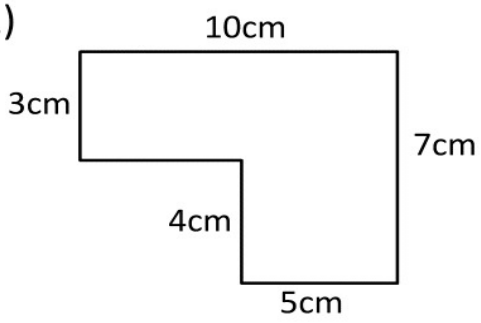
34. AREA AND PERIMETER

FIND THE PERIMETER AND AREA OF THE FOLLOWING FIGURES.



FIND THE PERIMETER AND AREA OF THE GIVEN FIGURES

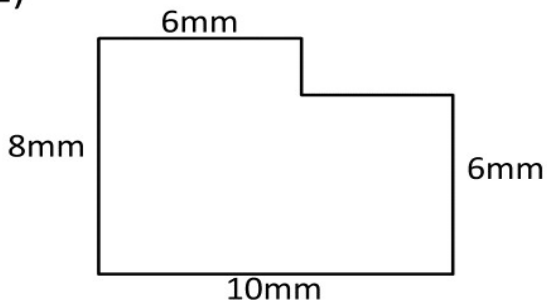
1)



Area = _____ square cm (cm^2)

Perimeter = _____ m

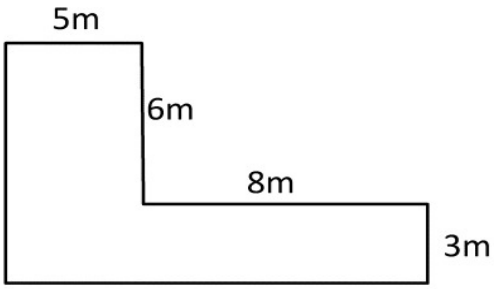
2)



Area = _____ square mm (mm^2)

Perimeter = _____mm

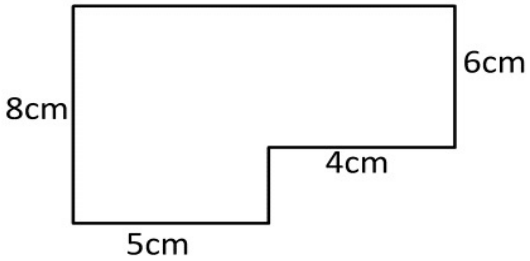
3)



Area = _____ square m (m^2)

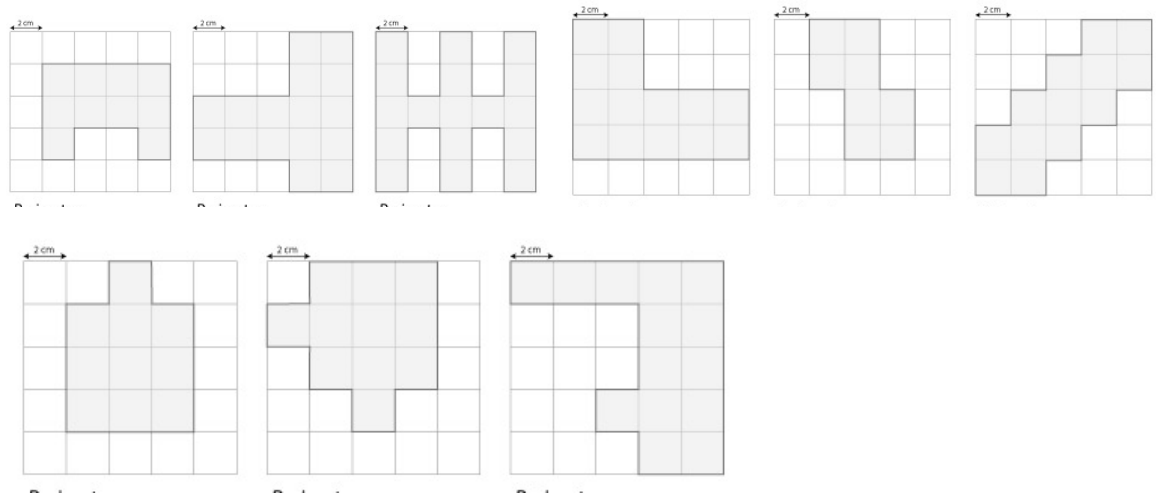
Perimeter = _____ m

4)



Area = _____ square cm (cm^2)

Perimeter = _____ cm



Draw any shape in each grid with the following area.

1) Area = 26 square units

2) Area = 22 square units

3) Area = 13 square units

4) Area = 17 square units

5) Area = 10 square units

6) Area = 24 square units

7) Area = 19 square units

8) Area = 15 square units

9) Area = 28 square units

Draw 3 different shapes with the area 20 square units.

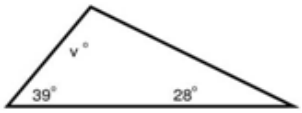
10)

11)

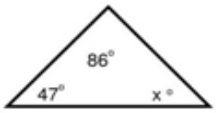
12)

35. ANGLE SUM PROPERTY OF TRIANGLE

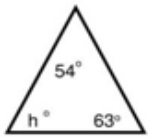
Solve for the given variable.

1) 

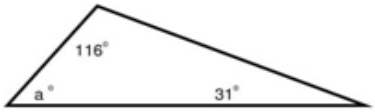
v = _____

2) 

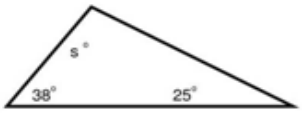
x = _____

3) 

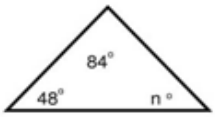
h = _____

4) 

a = _____

5) 

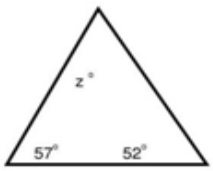
s = _____

6) 

n = _____

7) 

r = _____

8) 

z = _____

DO YOU KNOW THE VALUE OF PI ?

π = 3.14159 26535 89793 23846 26433 83279 50288 41971 69399 37510 58209 74944 59230 78164 06286 20899 86280 34825 34211 70679 82148 08651 32823…….

36. INTEGER ADDITION/SUBTRACTION

3 + (-8) =	(-9) - (-4) =	7 - 5 =
6 - (-4) =	(-4) - (-2) =	(-4) - 10 =
6 - 5 =	(-2) - 5 =	(-2) - 7 =
(-8) + (-2) =	8 + 6 =	(-9) + 10 =
8 + (-10) =	2 - (-10) =	8 - 5 =
8 - (-2) =	1 - (-7) =	4 + 2 =
(-2) + 6 =	(-4) - 4 =	9 - (-7) =
(-1) - 0 =	7 - 5 =	(-5) + (-10) =
(-1) - (-2) =	(-5) - (-6) =	9 - (-9) =
7 - 4 =	(-2) + 5 =	(-4) - (-10) =
8 - (-2) =	(-6) + 2 =	4 + 1 =

(-8) + 6 =	(-3) - 6 =	7 + (-3) =
(-1) + (-3) =	7 + (-10) =	(-8) - (-2) =
1 - (-6) =	(-6) + (-1) =	(-2) - (-7) =
2 + (-2) =	3 + (-6) =	7 - 4 =
(-5) - (-8) =	2 - (-6) =	(-8) - 10 =
2 - (-1) =	(-1) - 8 =	(-10) + 10 =
4 - 9 =	3 + 6 =	5 - 0 =
6 - 3 =	5 + 2 =	(-2) + 1 =
(-4) + (-2) =	(-8) + (-8) =	(-4) - (-1) =
10 + 4 =	7 + 9 =	(-9) - 1 =

1. 6 + -12 + 2 = _____
2. 11 + 14 + -2 = _____
3. -12 + -5 + -10 = _____
4. 5 + 13 + 6 = _____
5. 1 + -13 + 14 = _____
6. 1 + 14 + 17 = _____
7. 6 + 20 + 15 = _____
8. 0 + -8 + -7 = _____
9. 3 + 10 + -15 = _____
10. 3 + -16 + -16 = _____
11. -18 + -5 + 3 = _____
12. 18 + 15 + 14 = _____
13. -14 + 4 + 5 = _____
14. -5 + 17 + -15 = _____
15. 5 + -16 + 15 = _____
16. 3 + -6 + 17 = _____
17. -19 + -8 + -15 = _____
18. -9 + 4 + 15 = _____
19. 6 + -12 + 2 = _____
20. 11 + 14 + -2 = _____
21. -12 + -5 + -10 = _____
22. 5 + 13 + 6 = _____
23. 1 + -13 + 14 = _____
24. 1 + 14 + 17 = _____
25. 6 + 20 + 15 = _____
26. 0 + -8 + -7 = _____

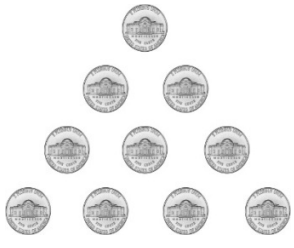
37. INTEGER MULTIPLICATION

Find each product.

$(-6) \times 0 =$	$7 \times 3 =$	$6 \times (-10) =$	$(-3) \times (-5) =$
$8 \times (-2) =$	$(-4) \times (-10) =$	$10 \times (-3) =$	$3 \times 5 =$
$9 \times (-4) =$	$10 \times 4 =$	$10 \times (-4) =$	$5 \times 9 =$
$0 \times (-10) =$	$11 \times 11 =$	$2 \times 3 =$	$(-4) \times (-12) =$
$(-4) \times (-6) =$	$(-10) \times (-2) =$	$3 \times 12 =$	$4 \times 7 =$
$2 \times 4 =$	$3 \times (-3) =$	$(-12) \times (-12) =$	$(-9) \times 5 =$
$9 \times (-7) =$	$9 \times 8 =$	$(-1) \times 10 =$	$(-1) \times (-2) =$
$4 \times (-12) =$	$(-6) \times (-5) =$	$10 \times (-1) =$	$(-7) \times (-9) =$
$7 \times 4 =$	$6 \times (-5) =$	$9 \times (-12) =$	$8 \times 1 =$
$(-2) \times 1 =$	$(-11) \times 2 =$	$12 \times 3 =$	$(-4) \times 3 =$
$7 \times (-8) =$	$11 \times 2 =$	$7 \times 11 =$	$(-9) \times (-12) =$
$(-12) \times 7 =$	$4 \times 10 =$	$8 \times 5 =$	$0 \times 3 =$
$11 \times 7 =$	$1 \times (-6) =$	$(-11) \times 4 =$	$0 \times (-6) =$
$11 \times (-9) =$	$4 \times (-2) =$	$2 \times (-11) =$	$(-5) \times 12 =$
$(-3) \times 1 =$	$(-1) \times 11 =$	$7 \times (-10) =$	$(-7) \times (-3) =$
$(-11) \times (-11) =$	$8 \times 4 =$	$(-3) \times 12 =$	$(-10) \times (-6) =$
$2 \times 7 =$	$(-5) \times 10 =$	$(-7) \times 5 =$	$(-2) \times 2 =$
$6 \times (-4) =$	$10 \times (-11) =$	$(-4) \times (-3) =$	$(-8) \times (-2) =$
$2 \times 12 =$	$(-4) \times 1 =$	$(-4) \times 7 =$	$(-1) \times 5 =$
$4 \times (-8) =$	$(-2) \times (-11) =$	$(-10) \times 7 =$	$(-8) \times 9 =$
$(-1) \times 2 =$	$(-9) \times (-8) =$	$1 \times 5 =$	$(-6) \times 12 =$
$(-10) \times (-4) =$	$(-11) \times (-10) =$	$1 \times (-12) =$	$3 \times (-7) =$
$(-3) \times (-4) =$	$8 \times 12 =$	$2 \times (-8) =$	$0 \times 8 =$
$5 \times (-7) =$	$0 \times 11 =$	$(-10) \times 10 =$	$(-8) \times 0 =$
$4 \times (-7) =$	$11 \times 1 =$	$(-3) \times 8 =$	$(-2) \times (-10) =$

TRY THIS !

Move only three coins and turn the triangle upside down.



Find the missing numbers:

1) _____ × (-8) = 32

2) 6 × _____ = 54

3) _____ × (-10) = 50

4) _____ × 8 = (-80)

5) 10 × _____ = 90

6) 9 × _____ = 27

7) 5 × _____ = 50

8) 3 × _____ = 30

9) _____ × (-9) = (-54)

10) _____ × (-7) = 70

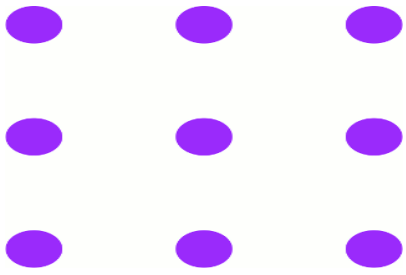
11) 4 × _____ = (-32)

12) (-2) × _____ = (-20)

13) _____ × (-1) = (-10)

14) (-5) × _____ = 30

TRY THIS…. Join all the dots using four straight lines and without lifting your pencil.



38. DIVSION OF INTEGERS

Find the quotient.

1. $-176 \div 11 =$ _____
2. $-190 \div 2 =$ _____
3. $33 \div 11 =$ _____
4. $4 \div 4 =$ _____
5. $54 \div 2 =$ _____
6. $-10 \div -10 =$ _____
7. $-60 \div -12 =$ _____
8. $15 \div -5 =$ _____
9. $60 \div -10 =$ _____
10. $168 \div 7 =$ _____
11. $60 \div -12 =$ _____
12. $88 \div -8 =$ _____
13. $24 \div 12 =$ _____
14. $110 \div -11 =$ _____
15. $-108 \div -3 =$ _____
16. $144 \div 6 =$ _____

Find the missing numbers:

1) _____ $\div (-6) = (-10)$
2) $44 \div$ _____ $= (-4)$
3) $24 \div$ _____ $= (-6)$
4) $48 \div$ _____ $= 4$
5) $(-72) \div$ _____ $= (-9)$
6) _____ $\div 12 = (-6)$
7) $(-48) \div$ _____ $= 8$
8) $50 \div$ _____ $= 5$
9) _____ $\div 11 = (-6)$
10) _____ $\div (-11) = 5$
11) $(-10) \div$ _____ $= 5$
12) _____ $\div 3 = 9$
13) $(-15) \div$ _____ $= 3$
14) _____ $\div (-4) = 6$
15) _____ $\div (-2) = (-6)$
16) _____ $\div (-6) = (-7)$

39. ALGEBRAIC EXPRESSIONS

Write each as an algebraic expression.

The difference of 10 and 5	U decreased by 17
The quotient of 14 and 7	Half of 1
The product of x and 7	X increased by 6
6 squared	The sum of q and 8
Twice q	The product of 8 and 12
The quotient of 18 and n	N cubed

Write each as a verbal expression.

$a + 9$	$5n$
$19 - 3$	2/Y
q^2	2P + Q
X / 2	$Z^2/5$
$n - 14$	2x - 3
x - y	xy

Evaluate each expression.

5 squared	20 decreased by 17	twice 6
9 times 5	7 squared	the quotient of 96 and 8
20 decreased by 17	7 times 6	10 less than 17
10 increased by 8	The product of 8 and 10	Difference of 5 and 7

Evaluate each using the values given.

1) $y \div 2 + x$; use $x = 1$, and $y = 2$	2) $a - 5 - b$; use $a = 10$, and $b = 4$
3) $p^2 + m$; use $m = 1$, and $p = 5$	4) $y + 9 - x$; use $x = 1$, and $y = 3$
5) $m + p \div 5$; use $m = 1$, and $p = 5$	6) $y^2 - x$; use $x = 7$, and $y = 7$
7) $z(x + y)$; use $x = 6$, $y = 8$, and $z = 6$	8) $x + y + y$; use $x = 9$, and $y = 10$
9) $p^3 + 10 + m$; use $m = 9$, and $p = 3$	10) $6q + m - m$; use $m = 8$, and $q = 3$
11) $p^2 m \div 4$; use $m = 4$, and $p = 7$	12) $y - (z + z^2)$; use $y = 10$, and $z = 2$
13) $z - (y \div 3 - 1)$; use $y = 3$, and $z = 7$	14) $(y + x) \div 2 + x$; use $x = 1$, and $y = 1$
15) $p - (9 - (m + q))$; use $m = 4$, $p = 5$, and $q = 3$	16) $(a^2 - b) \div 6$; use $a = 5$, and $b = 1$

40. SIMPLIFICATION OF EXPRESSIONS/

SOLVING OF EQUATIONS

SIMPLIFY THE FOLLOWING EXPRESSIONS

$-6k + 7k$	$12r - 8 - 12$	$n - 10 + 9n - 3$
$-4x - 10x$	$-2x + 11 + 6x$	$-r - 10r$
$11r - 12r$	$-v + 12v$	$-8x - 11x$
$5n + 11n$	$n + 4 - 9 - 5n$	$12r + 5 + 3r - 5$
$-5 + 9n + 6$	$n - 4 - 9$	$4n - n$
$-3x - 9 + 15x$	$-9k + 8k$	$-16n - 14n$
$-4 + 7(1 - 3m)$	$-5n + 3(6 + 7n)$	$-2n - (9 - 10n)$
$10 - 5(9n - 9)$	$9a + 10(6a - 1)$	$-9(6m - 3) + 6(1 + 4m)$
$-10(1 - 9x) + 6(x - 10)$	$5(-2n + 4) + 2(n + 3)$	$-3(10b + 10) + 5(b + 2)$
$-7(n + 3) - 8(1 + 8n)$		

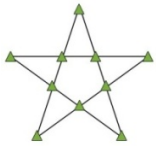
SOLVE THE FOLLOWING SIMPLE EQUATIONS:

1) $26 = 8 + v$	2) $3 + p = 8$	3) $15 + b = 23$
4) $-15 + n = -9$	5) $m + 4 = -12$	6) $x - 7 = 13$
7) $m - 9 = -13$	8) $p - 6 = -5$	9) $v - 15 = -27$
10) $n + 16 = 9$	11) $-104 = 8x$	12) $14b = -56$
13) $-6 = X/18$	14) $10n = 40$	15) $2Y - 32 = -17$

SOLVE THE FOLLOWING EQUATIONS:

$-20 = -4x - 6x$	$6 = 1 - 2n + 5$	$p - 1 = 5p + 3p - 8$
$a + 5 = -5a + 5$	$8x - 2 = -9 + 7x$	$4m - 4 = 6m$
$5p - 14 = 8p + 4$	$p - 4 = -9 + p$	$-8 = -(x + 4)$
$12 = -4(-6x - 3)$	$14 = -(p - 8)$	$-(7 - 4x) = 9$
$-18 - 6k = 6(1 + 3k)$	$5n + 34 = -2(1 - 7n)$	$3n - 5 = -8(6 + 5n)$
$2(4x - 3) - 8 = 4 + 2x$	$-3(4x + 3) + 4(6x + 1) = 43$	$-(1 + 7x) - 6(-7 - x) = 36$
$24a - 22 = -4(1 - 6a)$	$-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$	

CAN YOU SOLVE THIS? An intelligent trader travels from 1 place to another carrying 3 bags having 30 coconuts each. No bag can hold more than 30 coconuts. On the way he passes through 30 check points and on each checkpoint he has to give 1 coconut for each bag he is carrying. How many coconuts are left in the end?



IMPORTANT FORMULAE

ARITHMETIC PROPERTIES

ASSOCIATIVE	$a(bc) = (ab)c$
COMMUTATIVE	$a + b = b + a$ and $ab = ba$
DISTRIBUTIVE	$a(b + c) = ab + ac$

ARITHMETIC OPERATIONS EXAMPLES

$$ab + ac = a(b + c)$$
$$a\left(\frac{b}{c}\right) = \frac{ab}{c}$$
$$\frac{\left(\frac{a}{b}\right)}{c} = \frac{a}{bc}$$
$$\frac{a}{\left(\frac{b}{c}\right)} = \frac{ac}{b}$$
$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$
$$\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}$$
$$\frac{a - b}{c - d} = \frac{b - a}{d - c}$$
$$\frac{a + b}{c} = \frac{a}{c} + \frac{b}{c}$$
$$\frac{ab + ac}{a} = b + c, a \neq 0$$
$$\frac{\left(\frac{a}{b}\right)}{\left(\frac{c}{d}\right)} = \frac{ad}{bc}$$

QUADRATIC EQUATION

For the equation $ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

EXPONENT PROPERTIES

$$a^n a^m = a^{n+m}$$
$$(a^n)^m = a^{nm}$$
$$(ab)^n = a^n b^n$$
$$a^{-n} = \frac{1}{a^n}$$
$$\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n = \frac{b^n}{a^n}$$
$$\frac{a^n}{a^m} = a^{n-m} = \frac{1}{a^{m-n}}$$
$$a^0 = 1, a \neq 0$$
$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$
$$\frac{1}{a^{-n}} = a^n$$
$$a^{\frac{n}{m}} = \left(a^{\frac{1}{m}}\right)^n = (a^n)^{\frac{1}{m}}$$

PROPERTIES OF INEQUALITIES

If $a < b$ then $a + c < b + c$ and $a - c < b - c$

If $a < b$ and $c > 0$ then $ac < bc$ and $a/c < b/c$

If $a < b$ and $c < 0$ then $ac > bc$ and $a/c > b/c$

PROPERTIES OF COMPLEX NUMBERS

$$i = \sqrt{-1}$$
$$i^2 = -1$$
$$\sqrt{-a} = i\sqrt{a}, \quad a \geq 0$$
$$(a + bi) + (c + di) = a + c + (b + d)i$$
$$(a + bi) - (c + di) = a - c + (b - d)i$$
$$(a + bi)(c + di) = ac - bd + (ad + bc)i$$
$$(a + bi)(a - bi) = a^2 + b^2$$
$$|a + bi| = \sqrt{a^2 + b^2}$$
$$\overline{(a + bi)} = a - bi$$
$$\overline{(a + bi)}(a + bi) = |a + bi|^2$$
$$\frac{1}{(a + bi)} = \frac{(a - bi)}{(a + bi)(a - bi)} = \frac{a - bi}{a^2 + b^2}$$

RADICAL PROPERTIES

$a, b \geq 0$ for even n

$$\sqrt[n]{a} = a^{\frac{1}{n}}$$
$$\sqrt[m]{\sqrt[n]{a}} = \sqrt[mn]{a}$$
$$\sqrt[n]{ab} = \sqrt[n]{a}\sqrt[n]{b}$$
$$\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$$
$$\sqrt[n]{a^n} = a, \text{if } n \text{ is odd}$$
$$\sqrt[n]{a^n} = |a|, \text{if } n \text{ is even}$$

LOGARITHM PROPERTIES

if $y = \log_b x$ then $b^y = x$

$\log_b b = 1$ and $\log_b 1 = 0$

$$\log_b b^x = x$$
$$b^{\log_b x} = x$$
$$\log_a x = \frac{\log_b x}{\log_b a}$$
$$\log_b(x^r) = r \log_b x$$
$$\log_b(xy) = \log_b x + \log_b y$$
$$\log_b\left(\frac{x}{y}\right) = \log_b x - \log_b y$$

COMMON FACTORING EXAMPLES

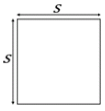
$$x^2 - a^2 = (x + a)(x - a)$$
$$x^2 + 2ax + a^2 = (x + a)^2$$
$$x^2 - 2ax + a^2 = (x - a)^2$$
$$x^2 + (a + b)x + ab = (x + a)(x + b)$$
$$x^3 + 3ax^2 + 3a^2x + a^3 = (x + a)^3$$
$$x^3 + a^3 = (x + a)(x^2 - ax + a^2)$$
$$x^3 - a^3 = (x - a)(x^2 + ax + a^2)$$
$$x^{2n} - a^{2n} = (x^n - a^n)(x^n + a^n)$$

ABSOLUTE VALUE

$$|a| = \begin{cases} a, & \text{if } a \geq 0 \\ -a, & \text{if } a < 0 \end{cases}$$
$$|a| = |-a|$$
$$|a| \geq 0$$
$$|ab| = |a||b|$$
$$\left|\frac{a}{b}\right| = \frac{|a|}{|b|}$$
$$|a + b| \leq |a| + |b|$$

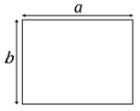
SQUARE

$P = 4s$
$A = s^2$



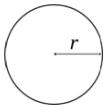
RECTANGLE

$P = 2a + 2b$
$A = ab$



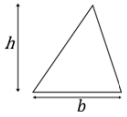
CIRCLE

$P = 2\pi r$
$A = \pi r^2$



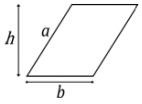
TRIANGLE

$P = a + b + c$
$A = \frac{1}{2}bh$



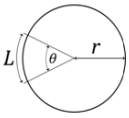
PARALLELOGRAM

$P = 2a + 2b$
$A = bh$



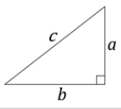
CIRCULAR SECTOR

$L = \pi r \frac{\theta}{180°}$
$A = \pi r^2 \frac{\theta}{360°}$



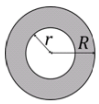
PYTHAGOREAN THEOREM

$a^2 + b^2 = c^2$
$c = \sqrt{a^2 + b^2}$



CIRCULAR RING

$A = \pi(R^2 - r^2)$

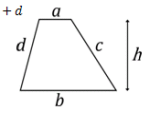


SPHERE

$S = 4\pi r^2$
$V = \frac{4\pi r^3}{3}$

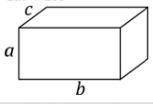
TRAPEZOID

$P = a + b + c + d$
$A = h\frac{a + b}{2}$



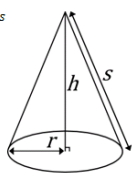
RECTANGULAR BOX

$A = 2ab + 2ac + 2bc$
$V = abc$



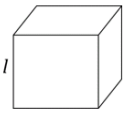
RIGHT CIRCULAR CONE

$A = \pi r^2 + \pi rs$
$s = \sqrt{r^2 + h^2}$
$V = \frac{1}{3}\pi r^2 h$



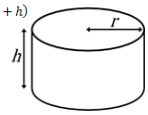
CUBE

$A = 6l^2$
$V = l^3$



CYLINDER

$A = 2\pi r(r + h)$
$V = \pi r^2 h$



FRUSTUM OF A CONE

$V = \frac{1}{3}\pi h(r^2 + rR + R^2)$

The Greek Alphabet

α alpha	β beta	γ gamma	δ delta	ε epsilon	ζ zeta
η eta	θ theta	ι iota	κ kappa	λ lambda	μ mu
ν nu	ξ xi	ο omicron	π pi	ρ rho	σ/ς sigma
τ tau	υ upsilon	φ phi	χ chi	ψ psi	ω omega

You are wrong if you think Mathematics is not fun……..