Name: _____

1) Fill in the blanks in these sequences:

(a) 3, 7, 11, 15, 19

(b) 17, 10, 3, -4, -11

(c) 3, 6, 12, 24, 48, 96

(d) 108, 36, 12, 4, 4/3 (8 Marks)

2) In the Great Hall there are 12 rows of 16 chairs. How many chairs is that in total?

$$\begin{array}{r} 16 \\ \times\ 12 \\ \hline 32 \\ 160 \\ \hline 192 \end{array}$$

Answer: 192 (2 Marks)

3) In the Old Gym there are 153 chairs arranged in rows of 9. How many chairs are there in each row?

$$9\overline{)153}\quad 17$$

Answer: 17 (2 Marks)

4) Fill in the blanks in this table, simplifying the fractions as far as possible:

Decimal	Fraction	Percentage
0.2	2/10 = 1/5	20%
0.4	$\frac{2}{5}$	40%
0.07	7/100	7%
0.15	15/100 = 3/20	15%

(8 Marks)

5) Solve these fraction problems, simplifying your answers as far as possible:

(a) $\frac{1}{3}+\frac{1}{6}=$ $\frac{2}{6}+\frac{1}{6}=\frac{3}{6}=\frac{1}{2}$

(b) $\frac{3}{5}-\frac{1}{7}=$ $\frac{21}{35}-\frac{5}{35}=\frac{16}{35}$

(c) $2\frac{1}{4}+3\frac{2}{5}=$ $\frac{9}{4}+\frac{17}{5}=\frac{45}{20}+\frac{68}{20}=\frac{113}{20}=5\frac{13}{20}$

or $2+3=5$ $\frac{1}{4}+\frac{2}{5}=\frac{5}{20}+\frac{8}{20}=\frac{13}{20}$

$5\frac{13}{20}$

(d) $4\frac{2}{5}-1\frac{5}{6}=$ $\frac{22}{5}-\frac{11}{6}=\frac{132}{30}-\frac{55}{30}=\frac{77}{30}=2\frac{17}{30}$

(10 Marks)

6) In a Maths test out of 60, Dave scored 60%. How many marks did he score?

10% = 6 marks.

60% = 6 × 6 = 36

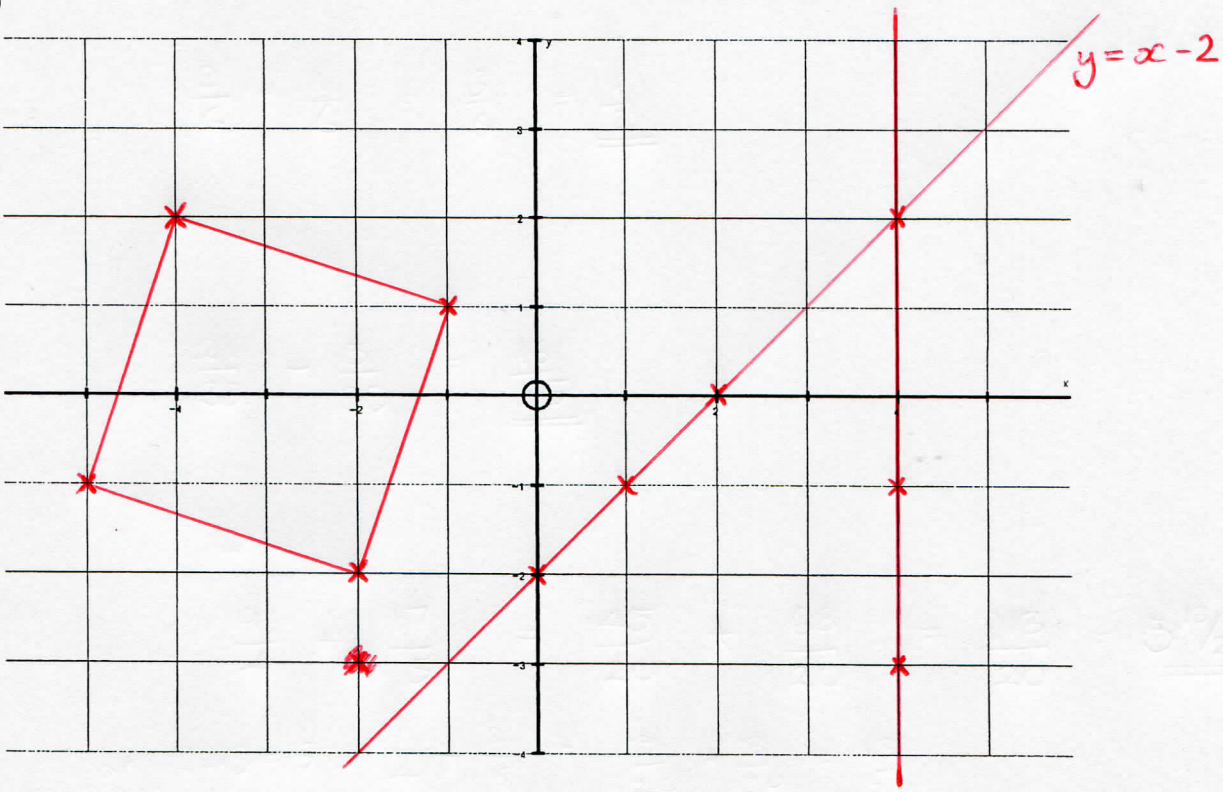
Answer.....36..... (2 Marks)

7) In a French test he scored 28 out of 40. What is this as a percentage?

$\frac{14\ 28}{40_{2}} \times \frac{100^{5}}{1}$

Answer:.....70%..... (2 Marks)

8)



(a) On the axes above plot the points (-1,1), (-4, 2), (-5, -1) and (-2, -2)

(b) If you join these points what shape do you get? ..... Square .....

(c) Fill in the gaps in this table and use it to draw the line y = x – 2

x	0	1	2
y	-2	-1	0

(d) Plot the points (4, -3), (4, -1) and (4, 2) and join them with a straight line.

(e) What is the equation of this line? ..... x = 4 .....

(6 Marks)

9) Fill in the blanks so these sums are correct:

(a) (-3) + ... 7 ..... = 4

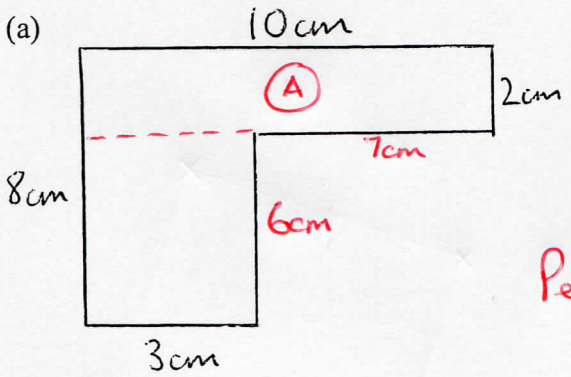
(b) (-3) × ..... -4 ..... = 12

(c) (-14) ÷ ..... 7 ..... = -2

(3 Marks)

10) Find the Area and Perimeter of the following shapes:

(a)



Area (A) $10 \times 2 = 20\ cm^2$

Area (B) $6 \times 3 = 18\ cm^2$

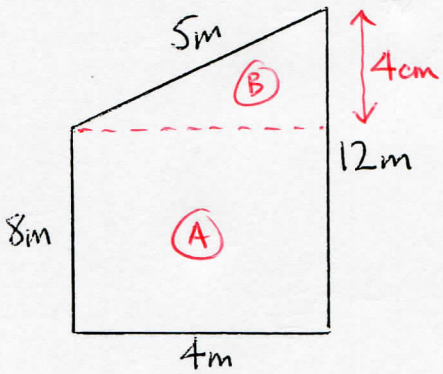
$38\ cm^2$

Perimeter = $10 + 2 + 7 + 6 + 3 + 8$

$= 36cm$

Area = 38 cm^2 ..... Perimeter = 36cm ..... (4)

(b)



Area (A) $8 \times 4 = 32cm^2$

(B) $\frac{1}{2} \times 4 \times 4 = 8cm^2$

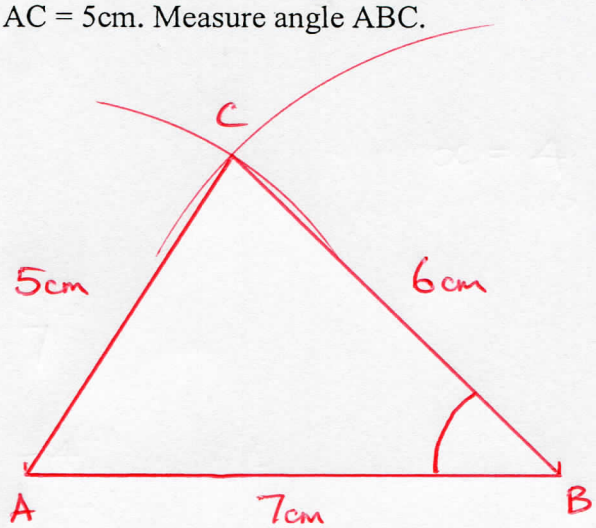
$40cm^2$

Perimeter = $5 + 12 + 4 + 8$

$= 29cm$

Area = 40 cm^2 ..... Perimeter = 29cm. ..... (4)

11) In the space below, accurately construct triangle ABC with sides AB = 7cm, BC = 6cm and AC = 5cm. Measure angle ABC.



Angle ABC = 44° ..... (3)

(accept 42° - 46°)

12) Fill in the blanks in this multiplication square:

x	0.1	3	0.5
2	0·2	6	1
0.4	0·04	1·2	0·2
0.06	0·006	0·18	0·03

(9 Marks)

13) Solve these equations:

(a) $x - 6 = 4$ $x = 10$

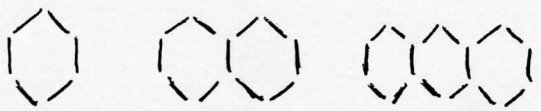
(b) $3x = 21$ $x = 7$

(c) $2x + 11 = 5$ $2x = -6$ $x = -3$

(d) $3 + \frac{1}{2}x = 4$ $\frac{1}{2}x = 1$ $x = 2$

(6 Marks)

14) (a) Draw the next shape in this sequence of hexagons made from matches:



6 11 16

(b) Write below each shape how many matches make up each shape.

(c) How many matches would be in the 10th shape?..... 51

(d) Can you find a formula for how many matches there are when there are n hexagons?

Matches = ... 5n + 1 ..... (4 Marks)

15) (a) Anne and Brian share 24 sweets in the ratio 3:5. How many sweets does Brian get?

3+5 = 8 24 ÷ 8 = 3

5 x 3 = 15

Answer: 15

(b) Anne, Brian and Charles share 35 sweets in the ratio 1:2:4. How many sweets does Brian get this time?

1+2+4 = 7 35 ÷ 7 = 5

2 x 5 = 10

Answer: 10

(c) Out of a pile of 96 sweets, Anne received 32, Charles received 40 and Brian received the rest. Write the ratio of Anne:Brian:Charles' sweets in its simplest form.

32 : 24 : 40 (÷ 8)

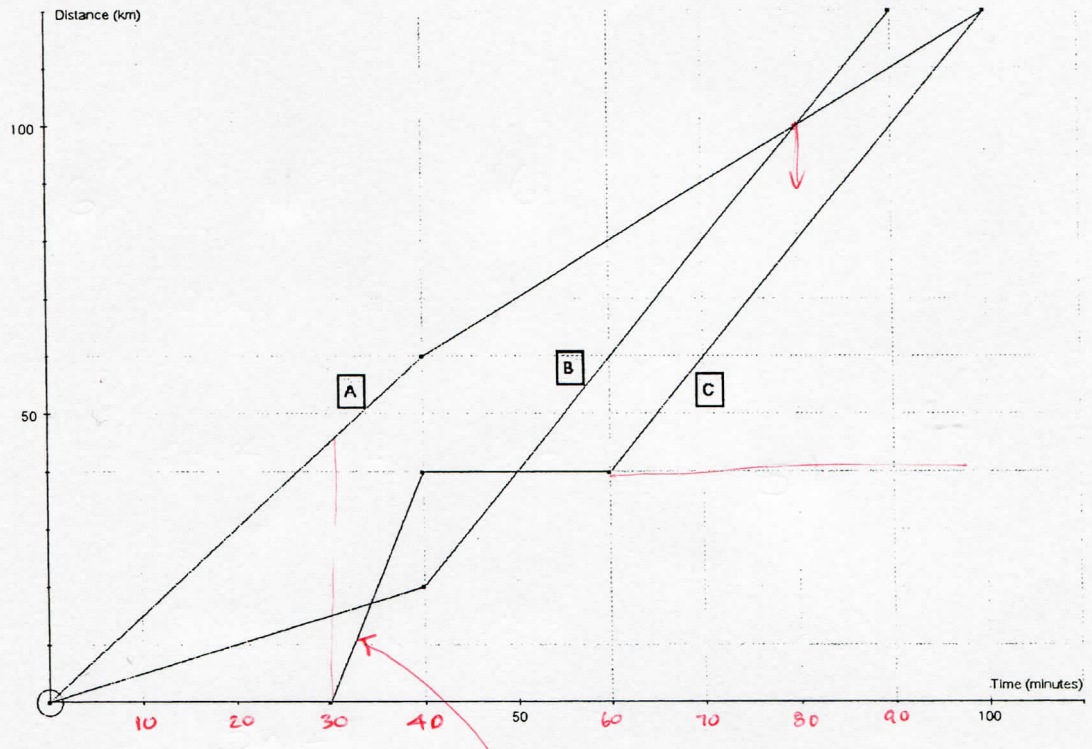
4 : 3 : 5

90 - 32 - 40 = 24

Answer: .....

(6 Marks)

16)



This distance-time graph shows the journeys of three cars A, B and C during a race of length 120km.

(a) What was the order of the cars (first, second, third) after 40 minutes?

Answer: A, C, B

(b) At what time did B overtake A?

Answer: 80 mins

(c) At what speed (in km per minute) did C finish the race?

Answer: 1·5 km per minute

60 ÷ 40

(d) Which car achieved the fastest speed during the race?

Answer: C

fastest when it is steepest.

(e) How far had A travelled when C started?

Answer: 45 km

(f) Who won?

Answer: B

(6 Marks)

17) Fill in the blanks to make these statements correct:

(a) 3.2m = ……320……..cm

(b) 40000m = ……40……km

(c) 2.05 litres = ……2050……ml

(d) 234mm = ……0·234……m

(4 Marks)

18) (a) Write down all the factors of 36

……1, 2, 3, 4, 6, 9, (12) 18, 36……

(b) What is the HCF of 36 and 48?

Factors of 48
1, 2, 3, 4, 6, 8, (12), 16, 24, 48

Answer:……12……

(c) What is the LCM of 36 and 48?

36, 72, 108, (144), 180, 216
48, 96, (144), 192,

Answer:……144……

(d) Which number less than 100 has the most factors?

Answer:……840……..

(6 Marks)

(which has 32 factors!)

1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 15, 20, 21, 24, 28, 30, 35, 40, 42
56, 60, 70, 84, 105, 120, 140, 168, 210, 280, 420, 840

19) A bag contains 4 red balls and 5 blue balls.

(a) What is the probability of pulling out a red ball?

4/9

(b) What is the probability of pulling out a yellow ball?

0

(c) How many red balls do I need to add to the bag so that the probability of pulling out a blue ball becomes 1/3?

6

(d) Sam says, "If I take out 3 balls, one if them is bound to be blue, because there are more blues than reds". Explain what is wrong with this statement

Could pick 3 reds in a row.

(e) If I take out all 9 balls and line them up in a row, which is more likely: the first four are red or the first four are blue?

First four are blue.

(5 Marks)

END OF TEST – NOW GO BACK AND CHECK YOUR WORK