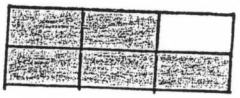
Year 8 (calculator allowed)

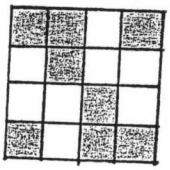
(5-6) 8(c)

1/ How many factors do the following numbers have? Make a list for each one before writing your answer.

a) 10 b) 14 c) 1 d) 9 e) 25 f) 7

2/ What fraction of the following shapes are shaded?

a) 

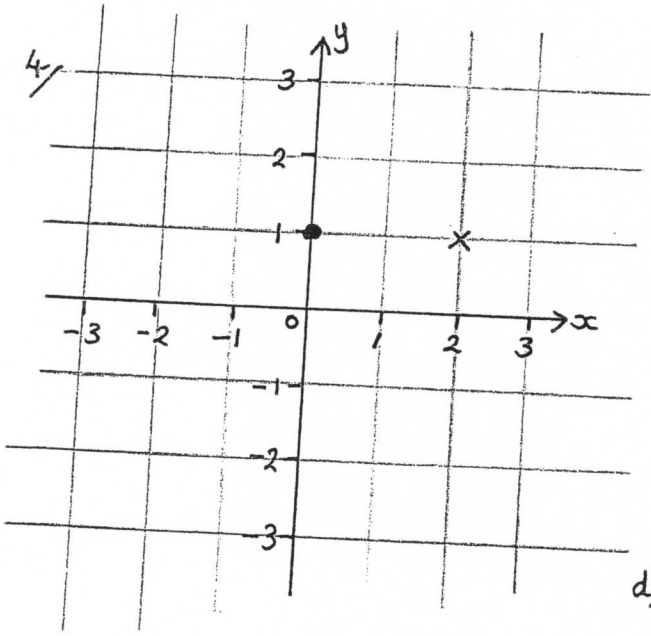
b) 

3/ Work out the value of the following expressions, when $x = 4$

a) $x + 3$ b) $10 - x$ c) $3x$ d) $5x + 3$

e) $3(x + 4)$

4/



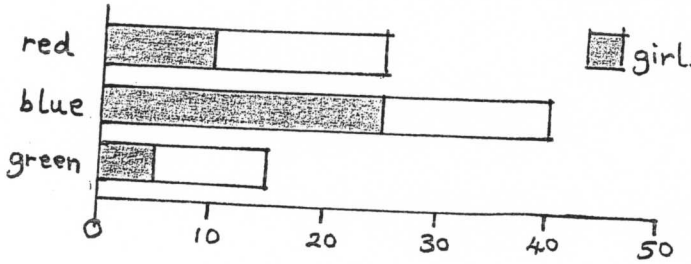
a) Write the co-ordinates for the point marked x

b) Start from the point marked x. Move 1 space to the left and 2 spaces up. Write the co-ordinates of the new point.

c) What is the inverse rule to the one given in part b)?

d) Use the inverse rule on the point marked •. Write the co-ordinates of the new point.

5/ Pupils were asked to choose their favourite colour from red, blue and green. The bar chart shows the results.

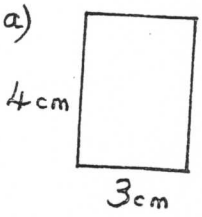


a) About how many boys chose blue?

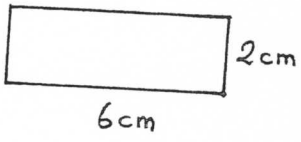
b) About how many pupils chose red?

6/ Work out the perimeters and areas of the following rectangles.

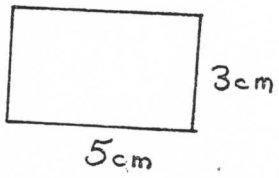
a)



b)

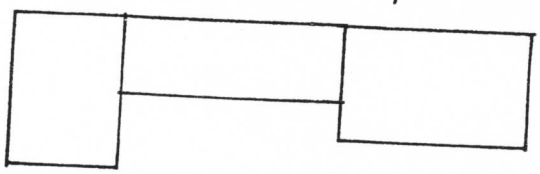


c)



7/ The 3 rectangles from question 6/ are placed next to each other to form a compound shape.

Work out the perimeter and area of the shape.



8/ Write down all of the prime numbers less than 20.

9/ The frequency table shows the number of goals scored by twenty teams on one Saturday.

goals scored	0	1	2	3	4
number of teams	7	7	4	0	2

a) How many teams scored at least one goal?

b) How many goals were scored altogether?

10/ If $2x + 5y = 26$, what is the value of $6x + 15y$?

11/ If $3x + 2y = 30$, what is the value of $\frac{3x+2y}{5}$?

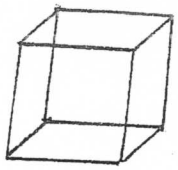
12/ If $x + 4y = 10$, what is the value of $(x+4y)^2$?

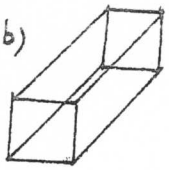
13/ Abi had a French test, a Maths test and a Science test. Her results are as follows.

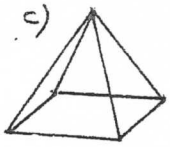
	correct answers	questions on test
French	38	52
Maths	55	80
Science	42	65

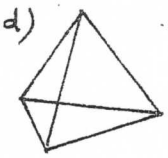
On which test did Abi score the greater proportion of correct answers?

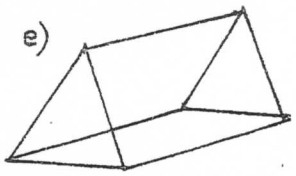
14

a) 

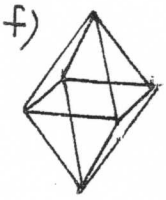
b) 

c) 

d) 

e) 

Write down the names of the shapes above.
Give 2 names for d).

f) 

15 Sketch the nets of the shapes in question 14/. (not f)

16 Simplify the following expressions.

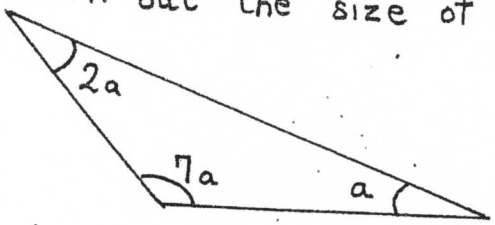
a) $3a + 2 + 3 + 4a$ b) $5a + 7 - 2a + 4$

c) $a + 4 - 3a - 1$

17 Fill in the gaps in the following equations

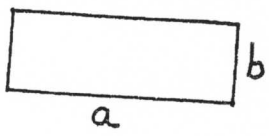
a) $4a + 2 = 2a + 1 \ldots\ldots$ b) $6a + 3 \ldots\ldots = 9a + 2$

18 Work out the size of the angles in the following triangle.



19 Look at the shapes in question 14/.
Write down the number of faces, edges and vertices of each shape.

20 Write an expression for the area of the following shapes.

a) 

b) a square of side length c

21 Write an expression for the perimeter of the shapes in question 20/

22 What is the formula for calculating the area of a circle?

23 What is the formula for calculating the circumference of a circle.

Year 8 (calculator allowed)

24 The following are equations of straight-line graphs.

① $y = 4x$ ② $y = 2x + 3$ ③ $y = x + 4$

④ $y = 2x + 4$ ⑤ $y = 3x - 2$ ⑥ $y = 5x - 1$

a) Which line is the steepest?

b) Which line passes through the origin?

c) Which line has a gradient of 3?

d) Which two lines are parallel?

e) Which line goes through the point (1, 6)?

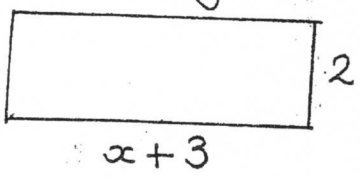
25 The following are also equations of straight-line graphs.

① $2y = 5x + 4$ ② $3y = 6x - 6$ ③ $2y - 4x = 8$

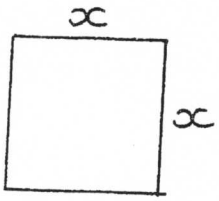
Which line goes through the point (3, 4)?

26 Write an expression for the area of each of the following shapes.

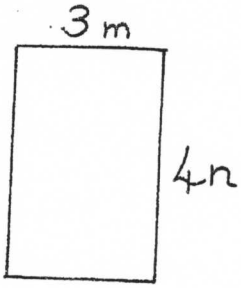
a)



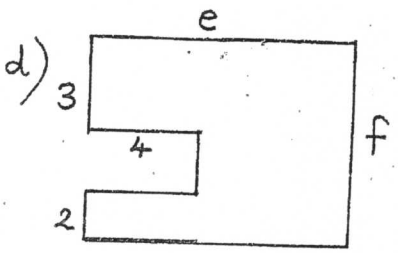
b)



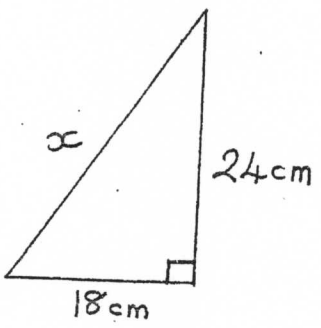
c)



d)



27 Calculate the length of the missing side in this triangle.



28 Write down the value of the following.

a) 19^2 b) 8^3 c) 3^7 d) 10^9 e) 5^4

29 Mr. Hicks runs at an average speed of 16 km per hour. During one month Mr. Hicks ran a total of 224 Kilometres. For how many hours did he run?

30 Terry leaves his house to go to a party 18 miles away at 7.35pm, and he needs to be at the party for 8.05pm, At what average speed would he have to drive?

31 The line AB is 6cm long.

Draw the line AB. Then draw the set of all points that are 3cm from AB.

32 Write down some Pythagorean triples.