

First Name	
Last Name	
Date	
Total Marks	/ 100 marks

MathsMadeEasy

GCSE Mathematics  
Non-Calculator  
Foundation Tier  
Free Practice Set 4  
1 hour 30 minutes



Answers at:

<http://www.mathsmadeeasy.co.uk/gcsemathspapers-free.htm>

### Instructions

Write your name and other details in the boxes above.

Answer all the questions

Take  $\pi$  to be 3.142

### Information

Marks are shown in brackets for each question (2)

**Calculators may not be used**

### Advice

Don't spend too long on one question

Show all your working in calculations for full marks

You will get marks for method even if your answer is incorrect

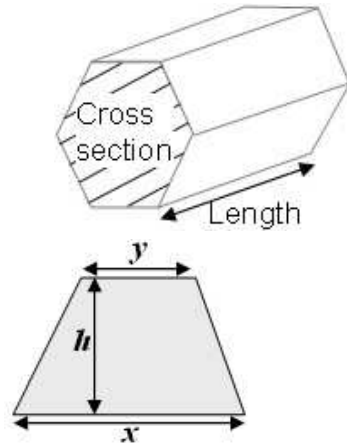
Leave a question until later if you cannot answer it

### Materials needed for examination

Ruler marked in centimetres and millimetres,  
protractor, compasses, pen, pencil, rubber  
Tracing paper may be used

## Formulae Sheet

**Volume of prism** = area of cross section  $\times$  length



**Area of trapezium** =  $\frac{1}{2}(x + y)h$

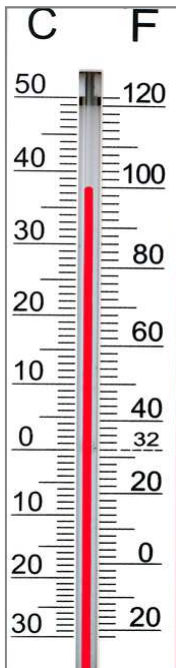
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This paper is dedicated to my grandson, Henry George Dew  
Born 19 April 2011

1. The thermometer below has two scales – one for the temperature in degrees Centigrade (C) and one for degrees Fahrenheit (F)



- a) What is the temperature reading shown, in degrees Centigrade?

.....

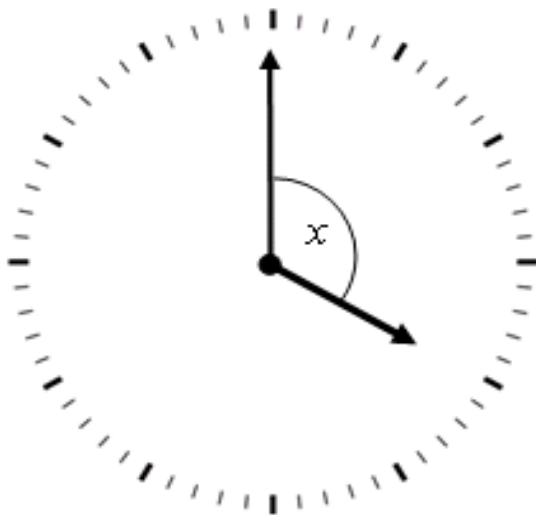
(1)

- b) Use the scale to find an estimate of 30 degrees Centigrade in degrees Fahrenheit

.....

(1)

2. A clock face is shown below with a time of 4:00pm



- a) Use a protractor to measure the angle  $x$

.....

(1)

- b) What type of angle is  $x$ ?

.....

(1)

Clock Face

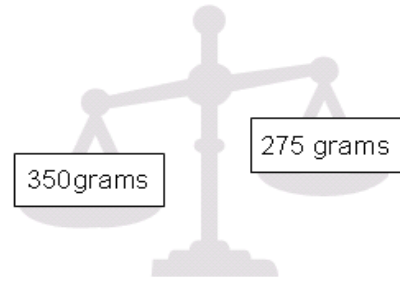
- c) Draw **7pm** on the clock face.  
How many degrees has the **hour hand** moved by?

.....

(1)

3. The scale shown is out of balance.

a) How many grams do you need to add to one side of the scales to get them to balance?



..... (1)

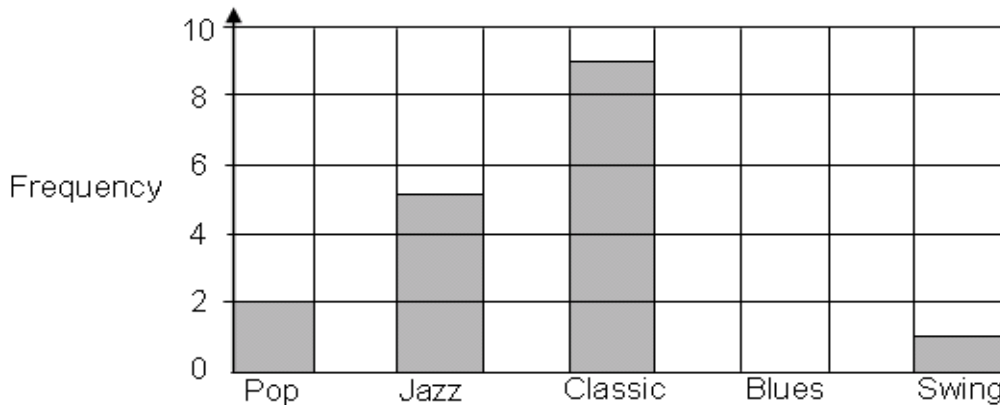
b) What is 2500 grams in kilograms

..... (1)

c) What is 1.2 metres in centimetres

..... (1)

4. David recorded how many different types of CDs he had. He plotted the information on the bar chart below.



a) How many Classic CDs did he have?

..... (1)

b) David had three Blues CDs. Complete the bar chart with this information

(1)

c) How many CDs did David have altogether?

..... (1)

5. a) Write 21365 in words

.....  
.....

(1)

b) What is 21365 to the nearest hundred

.....

(1)

c) What is the value of 1 in 21365

.....

(1)

6. a) Work out  $\frac{4}{3} \times \frac{3}{2}$

Give your answer in its simplest form

.....

(1)

b) Complete the missing values:

$$\frac{4}{5} = \frac{\square}{20}$$

.....

(1)

c) Work out  $\frac{3}{10} - \frac{1}{5}$

Give your answer in its simplest form

.....

(2)

7. Estimate the value of  $\frac{15 \times 9.8}{5.1}$

..... (3)

8. Look at the list of numbers below:

4      5      6      7      8      9      10

a) Which numbers in the list are prime numbers.

..... (1)

b) What is the median?

..... (1)

c) Which number is a factor of 21?

..... (1)

d) What is the mean?

..... (2)

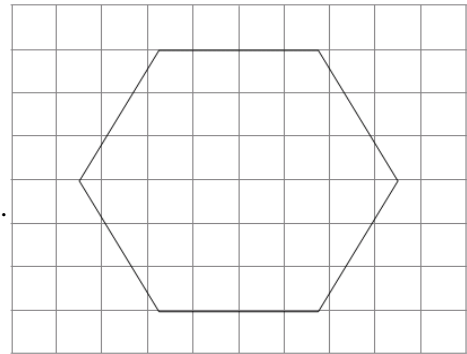
e) Which numbers are square numbers?

..... (1)

9. A shape is shown here.

a) What is the name of the shape?

.....



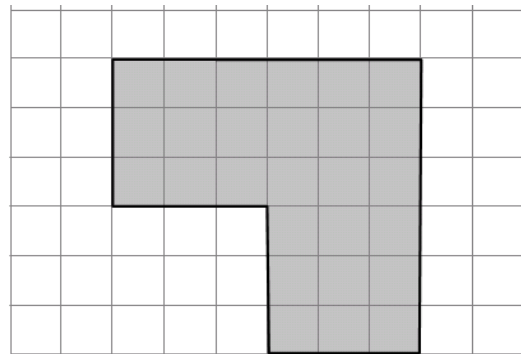
(1)

b) What is the order of rotational symmetry of the shape?

.....

(1)

Another shape is shown here on a **centimetre** grid



c) Draw a line of symmetry on the shape

(1)

d) Work out the area of the shape. What are the units?

.....

(2)

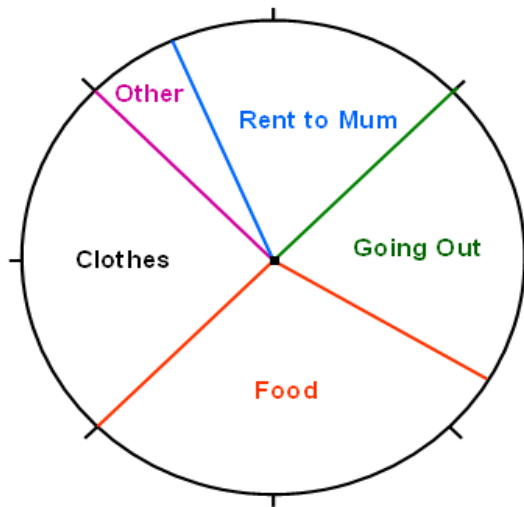
e) Work out the perimeter of the shape

.....cm

(1)

10. In 1980, a woman earned **£40** each week

The pie chart shows how she spent her money.



(a) How much did the woman spend on clothes each week?

£..... (1)

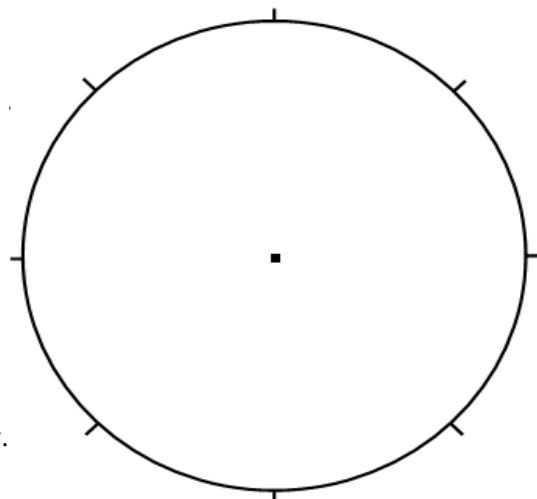
b) Estimate how much rent she paid to her Mum?

£..... (1)

In 2005, a woman earned **£240** each week.

The table shows how she spent her money.

Rent	£120
Food	£60
Clothes	£30
Going out	£30



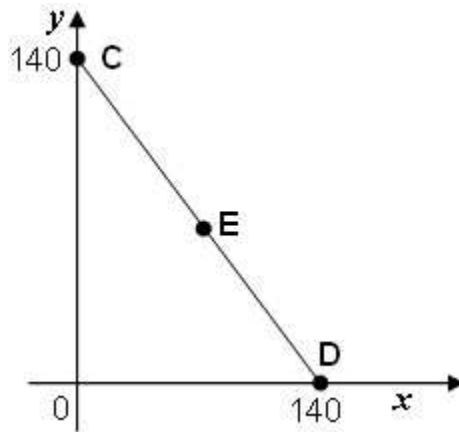
c) Complete the pie chart opposite to show how the woman spent her money.

(2)

Remember to **label** each sector of the pie chart.



11.

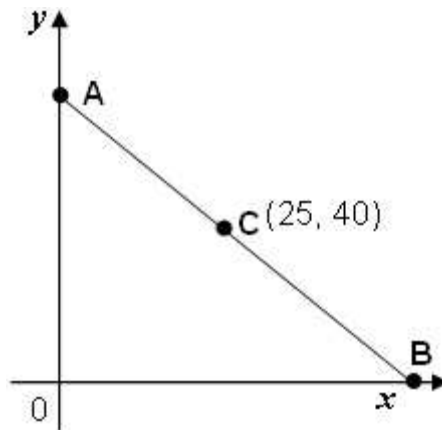


- (a) E is the midpoint of line CD.

What are the coordinates of point E?

E is (....., ..... ) (1)

- (b) C is the midpoint of line AB.



The coordinates of C are ( 25, 40 )

What are the coordinates of points A and B?

A is (....., ..... ) (1)

B is (....., ..... ) (1)

12. Outside a school, the speed of passing cars was recorded.

The speed of 17 cars is shown below.

14    17    20    25    31    40    17    21    27  
32    33    18    24    28    24    29    24

a) Draw an ordered stem and leaf diagram to show this information  
Remember to include a key.



key

(3)

b) What is the median speed?

.....

(1)

**13.** Write these numbers in order of size.  
Start with the largest positive number.

a)      0.71                  0.079                  0.709                  0.78                  0.09

.....

(1)

b)      - 3                  - 4                  2                  0                  -1

.....

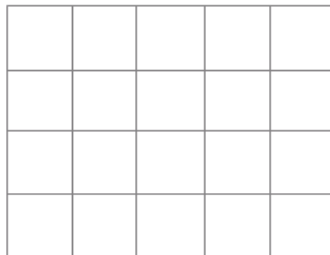
(1)

c)                   $\frac{2}{5}$                    $\frac{7}{10}$                    $\frac{2}{6}$                    $\frac{4}{5}$

.....

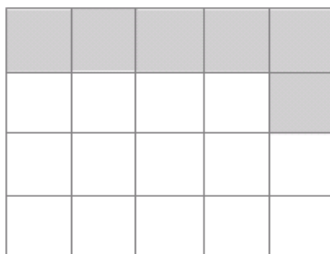
(1)

**14.** a)      Shade  $\frac{2}{5}$  of this grid



(1)

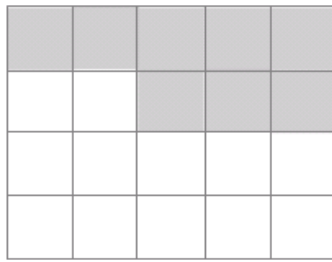
b)      A shaded grid is shown below.  
What fraction of this grid is shaded? Make your fraction as simple as possible.



.....

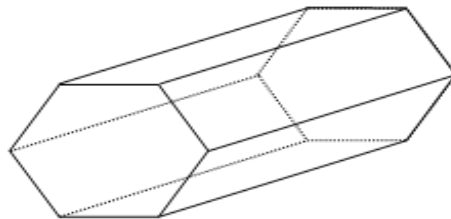
(1)

- c) Another shaded grid is shown below.  
What percentage of the grid is shaded?



..... (1)

15. Look at this diagram showing a 3-D shape.



- a) How many faces does the shape have?

..... (1)

- b) How many vertices does it have

..... (1)

16. Work out:

a)  $4 \times 5 - 3$

..... (1)

b)  $11 - 5 \times 2$

..... (1)

c)  $3 \times (5 - 1)$

..... (1)

d)  $2 \times (5 - 1)^2$

..... (1)

17. The X31 bus time table is shown below

Toddington	07 10	08 05	09 08
Houghton Regis	07 17	08 12	09 15
Dunstable	07 30	08 25	09 28
L&D hospital	07 43	08 43	09 44
Luton	07 56	08 57	09 57

- a) Jane needs to get to the L&D hospital for a 08:55 appointment.  
What is the **latest** time she can get a bus from Toddington?

..... (1)

- b) How long in minutes will Jane be on the bus?

..... (2)

- c) Laura wants to go shopping in Luton and lives in Houghton Regis.  
She arrives at the bus stop at 08:08.

- i) How long will she have to wait for the next bus?

..... (1)

- ii) What time will she arrive in Luton

..... (1)

18.

On the grid, draw the graphs of

$$x = -2$$

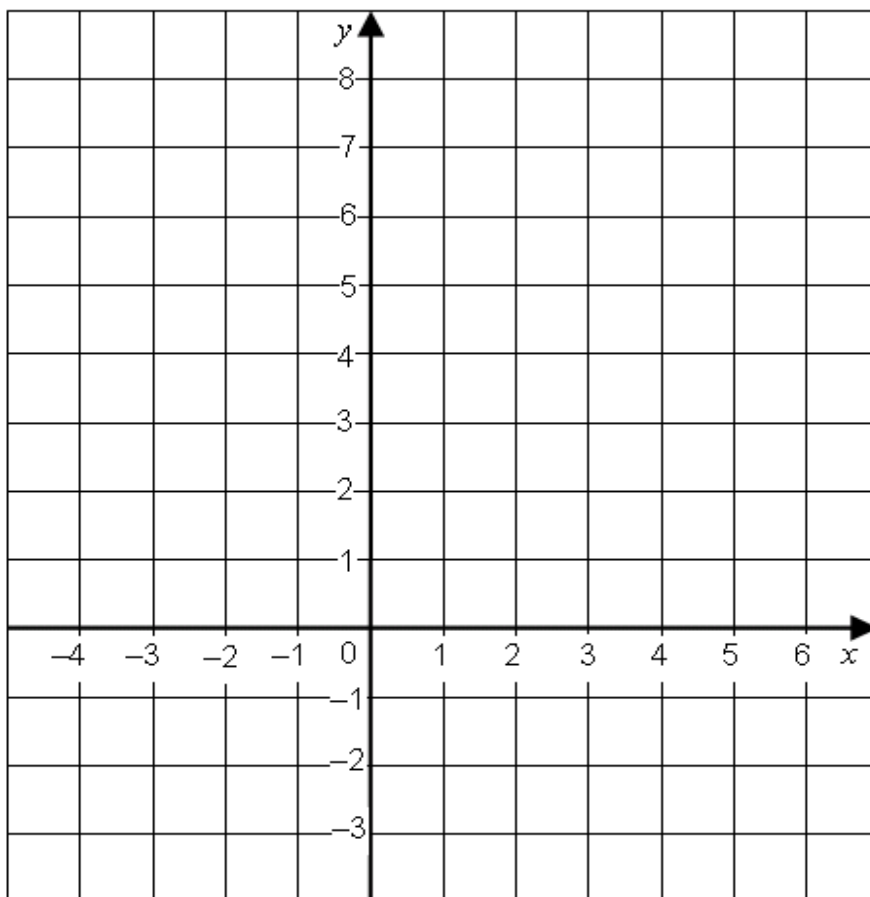
(1)

$$y = -1$$

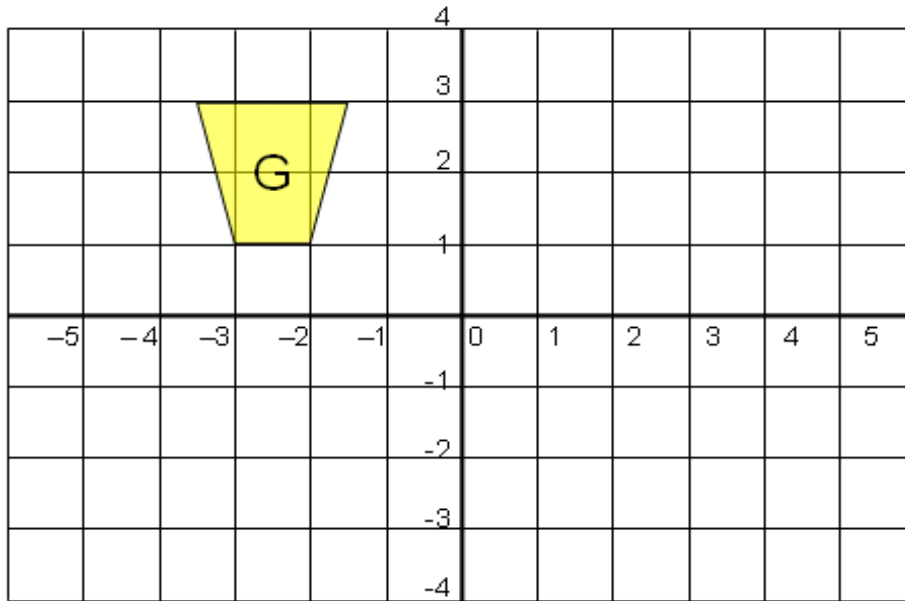
(1)

$$y = x - 3 \quad \text{for } x \text{ from } -1 \text{ to } 4$$

(3)

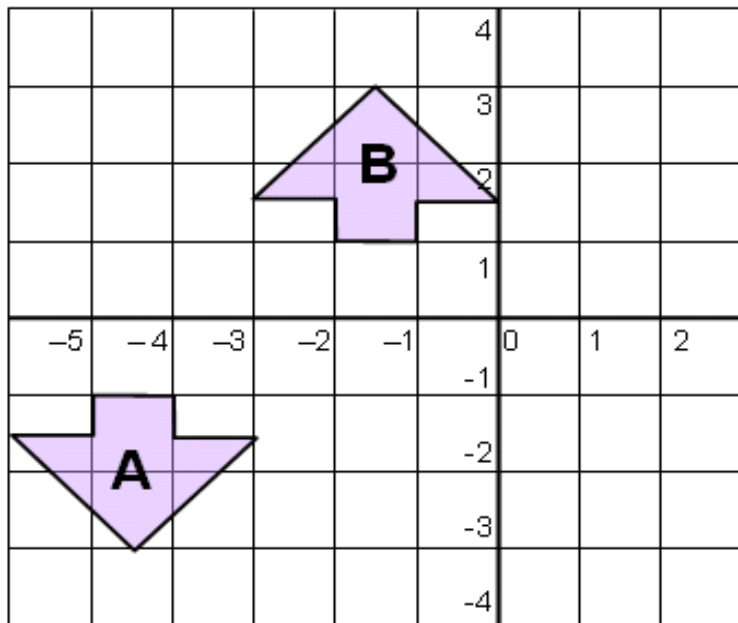


19.



(1)

- a) Translate shape G by the vector  $\begin{pmatrix} -2 \\ -4 \end{pmatrix}$  Label the new shape H.
- b) Fully describe the single transformation which takes shape A to shape B



(3)

.....

.....

20. a) The  $n$ th term of a sequence is  $7n + 3$   
What is the 6th term of this sequence?

..... (1)

b) Look at these numbers

4                      7                      10                      13

Write down the expression for the  $n$ th term of the sequence

..... (2)

21. Whilst in Switzerland Matthew bought a snowboard.

The normal price was 560 Swiss Francs (CHF), but he got it in a sale with 15% off.

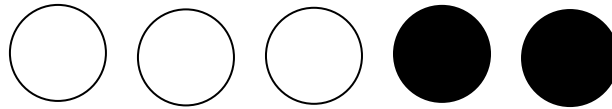
How much did Matthew pay for the snowboard?



CHF..... (3)



22. a) Cyril puts 3 white counters and 2 black counters in a bag.



He is going to take one counter without looking.

What is the **probability** that the counter will be **white**?

..... (1)

b) Cyril puts the counter back in the bag and then puts more white counters in the bag.

He is going to take one counter without looking.

The **probability** that the counter will be **black** is now  $\frac{1}{4}$

**How many more** white counters did Cyril put in the bag?

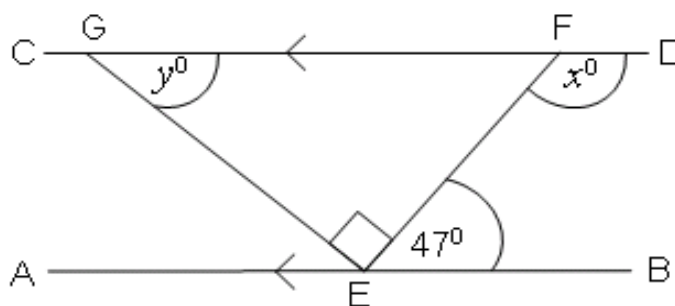
..... (2)

23. Work out:

$$243 \times 57$$

..... (2)

24. The diagram shows two parallel lines AB and CD and a triangle EFG.

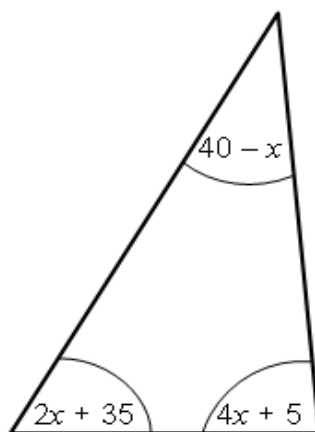


Work out the sizes of angles  $x$  and  $y$

$x = \dots\dots\dots^\circ$  (1)

$y = \dots\dots\dots^\circ$  (1)

25. Three angles are shown in the triangle below.



- a) Write an equation for the sum of the total angles in the triangle in terms of  $x$ .

$\dots\dots\dots$  (2)

- b) Solve the equation to find  $x$

$x = \dots\dots\dots^\circ$  (2)

- c) What is the size of the largest angle in the triangle.

largest angle =  $\dots\dots\dots^\circ$  (1)

26. a) Work out  $1\frac{4}{7} + 2\frac{2}{3}$

Give your answer as a fraction in its simplest form.

..... (2)

b) Work out  $\frac{3}{5} \div \frac{3}{10}$

Give your answer as a fraction in its simplest form

..... (2)

27. a) Find the values of  $x$  in

$$6x - 5 = 19$$

$x = \dots\dots\dots$  (2)

b) Simplify  $8x + 3q - 6x - 4q$

$\dots\dots\dots$  (1)

c) Simplify  $10x^2 - 7x^2$

$\dots\dots\dots$  (1)

d) Factorise  $4t - 20$

$\dots\dots\dots$  (1)

$$y^2 - 5y$$

$\dots\dots\dots$  (1)

e) Expand and simplify  $4(x + 2y) + 3(4x - y)$

$\dots\dots\dots$  (2)