

# Excel in Learning

## KS3 Maths Exam

Name: .....

Date: .....

Questions marked with \* are harder questions, try those at the end

Total:        /66

Q1

Work out  $2860 - 613$

(1 mark)

Work out  $63.1 + 28.74 - 19$

(2 marks)

Q2

Work out  $1168 \div 8$

(1 mark)

Work out  $9.06 \times 7.9$

(2 marks)

Q3

Write down the value of  $\sqrt{49}$

(1 mark)

## Q4

Write  $\frac{72}{90}$  as a fraction in its simplest form.

(1 mark)

There are 26 sweets in a bag.

15 of the sweets are red.

The rest of the sweets are white.

What fraction of the sweets are red?

(2 marks)

## Q5

Write 0.29 as a percentage.

(1 mark)

Write the following numbers in order of size.  
Start with the smallest number.

75%       $\frac{7}{10}$       0.72      0.9       $\frac{4}{5}$

(1 mark)

## Q6

Solve  $x + 6 = 18$

(1 mark)

Solve  $4a = 24$

(1 mark)

## Q7

Here is a list of 8 numbers.

1      2      3      4      5      6      8      9

One of the numbers is chosen at random.

Write down the probability that this number is 9.

(2 marks)

There are 53 counters in a bag.

15 of the counters are red.

The rest of the counters are blue.

One of the counters is taken at random.

Find the probability that the counter is blue.

(2 marks)

## Q8

Here is a list of 10 numbers.

2      3      4      4      4      5      6      6      7      7

(a) Work out the range.

(b) Find the mode.

(c) Calculate the mean.

(3 marks total)

Here is a list of numbers.

8      6      4      5      9      8

(a) Work out the median

(2 marks)

## Q9

(a) Write the ratio  $32 : 24$  in its simplest form

(b)  $\frac{1}{9}$  of people in a class are left handed.

Write the ratio of left handed people to right handed people

(3 marks total)

Alvin and Simon shared £540 in the ratio  $4 : 5$

Alvin gave half of his share to Theo.

Simon gave a tenth of his share to Theo.

What fraction of the £540 did Theo receive?

(2 marks)



## Q10

Find 36% of 2500

(1 mark)

Which is greater

25% of 90 or 28% of 82

You must show your working.

(1 mark)

## Q11

$$f = 7$$

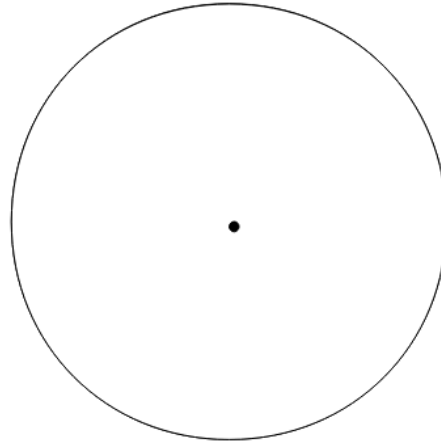
$$g = 5$$

Work out the value of  $3f + 2g$

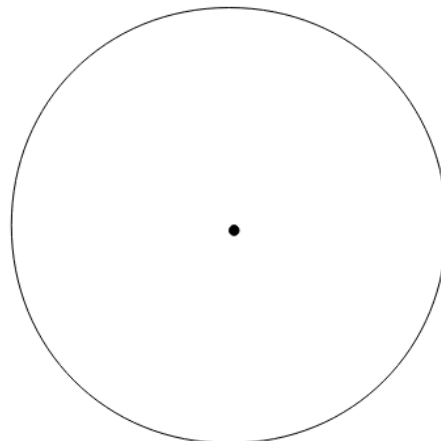
(1 mark)

# Q12

(a) On the diagram below, draw a radius of the circle.



(b) On the diagram below, draw a sector of the circle.  
Shade the sector.



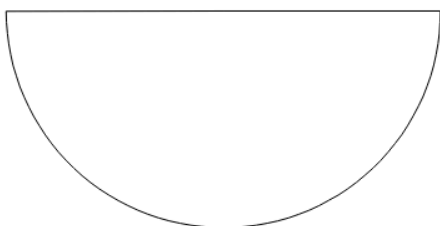
(2 marks)

A semi-circle has an area of  $50 \text{ m}^2$ .

Find the perimeter of the semi-circle.

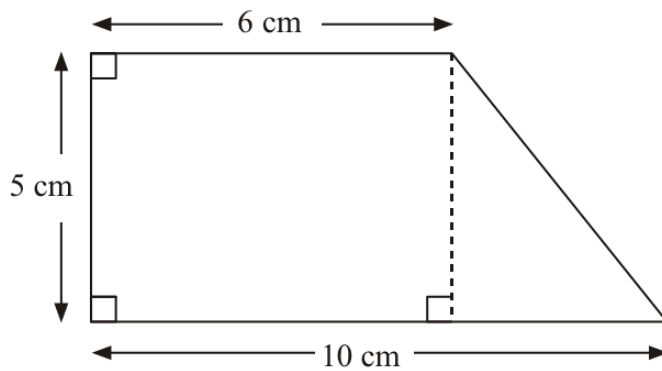
Give your answer correct to one decimal place.

(2 marks)



## Q13

Here is a trapezium.



Work out the area of the trapezium.

(3 marks)

## Q14

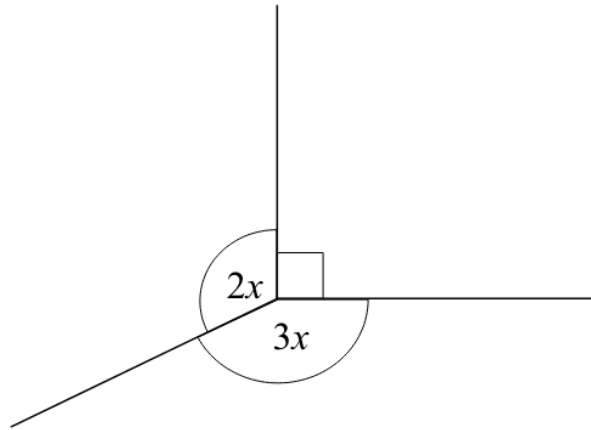
(a) Simplify  $x^8 \times x^3$

(b) Simplify  $(5y)^3$

(c) Simplify  $\frac{w^7}{w^4}$

(3 marks total)

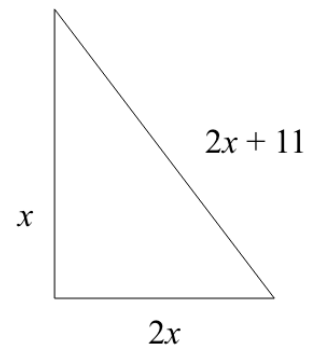
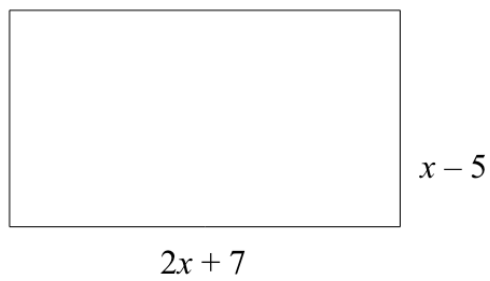
# Q15



Find the value of  $x$ .

(2 marks)

The diagram shows a rectangle and a triangle.



The perimeter of the rectangle is equal to the perimeter of the triangle.

Find the value of  $x$ .

(3 marks)

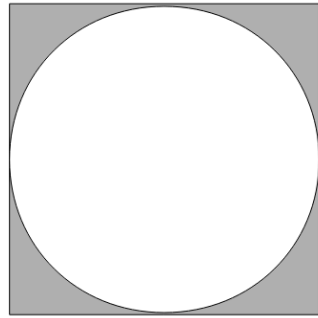
## Q16\*

A circle is enclosed by a square as shown in the diagram.

Each side of the square measures 8cm.

Find the area of the shaded region.

Give your answer correct to 1 decimal place.



(4 marks)

## Q17

A machine fills 1000 bottles in 5 hours.

Work out how many hours it would take the machine to fill 1200 bottles.

(2 marks)

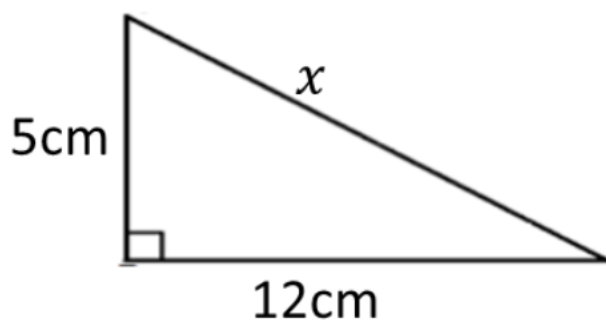
It takes 3 machines 2 days to produce a batch of products

Work out how long it would take 1 machine to produce the same batch of products.

(2 marks)

## Q18

Solve the following:

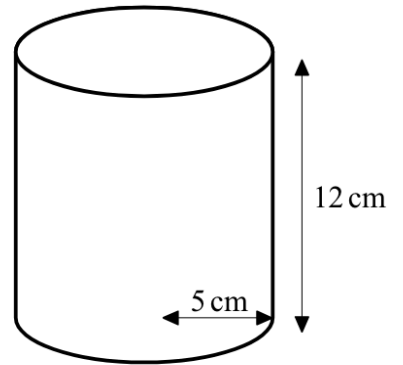


(2 marks)

## Q19\*

A cylinder has a radius of 5 cm and a height of 12 cm.

Work out the volume of the cylinder.  
Give your answer in terms of  $\pi$ .



(4 marks)

## Q20

Here are the first four terms of a number sequence.

2                      3                      5                      9

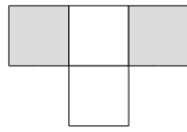
The rule to continue the sequence is  
multiply the previous term by 2 and then subtract 1

Work out the 5<sup>th</sup> term of this sequence.

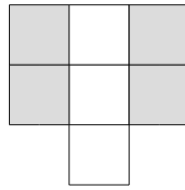
(2 marks)

# Q21

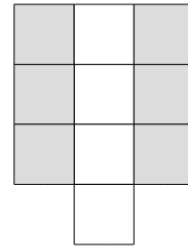
Here is a sequence of patterns made from white tiles and grey tiles.



pattern number 1



pattern number 2



pattern number 3

(a) In the space below, draw pattern number 4.

(b) Work out the total number of tiles to make pattern number 7.

(4 marks total)



End of exam paper