



# King Edward's School Witley

## ENTRANCE EXAMINATION IN MATHEMATICS FOR ENTRY AT PRE-SIXTH FORM

Name: .....

Date: .....

**A calculator may be used**

Time allowed: 50 minutes

Total marks available: 55

Total marks achieved:

Q1.



(i) What percentage of this shape is shaded?

..... %

(ii) Write your answer to part (i) as a decimal.

.....

**(Total for Question is 2 marks)**

Q2.

Here is a list of six numbers.

2            3            5            6            7            8

From the list, write a number in each box, to make each statement correct.

(i)  +  ×  = 61

(ii)  -  ÷  = 0

**(Total for question = 2 marks)**

**Q3.**

A box contains 80 tea bags.

The table shows information about the weight of each tea bag.



<b>Weight (<math>w</math> grams)</b>	<b>Number of tea bags</b>
$2.8 < w \leq 2.9$	2
$2.9 < w \leq 3.0$	4
$3.0 < w \leq 3.1$	22
$3.1 < w \leq 3.2$	32
$3.2 < w \leq 3.3$	14
$3.3 < w \leq 3.4$	6

Work out the percentage of the 80 tea bags that weigh more than 3.1 grams.

..... %

**(Total for Question is 2 marks)**

Q4.

Work out the value of

$$\frac{6.7 - 2.5}{2.8 \times 0.4}$$

Give your answer as a decimal.

.....

**(Total for question is 2 marks)**

Q5.

(a) Write  $\frac{30}{45}$  as a fraction in its simplest form.

.....

(1)

(b) Work out  $\frac{5}{6}$  of 48

.....

(2)

(c) Convert  $\frac{7}{8}$  to a decimal.

.....

(2)

**(Total for question is 5 marks)**

Q6.

(a) (i) Find  $\sqrt{19}$

Write down all the figures on your calculator display.

(ii) Write your answer to part (i) correct to 2 decimal places.

.....

.....

(2)

(b) Find  $16^3$ .

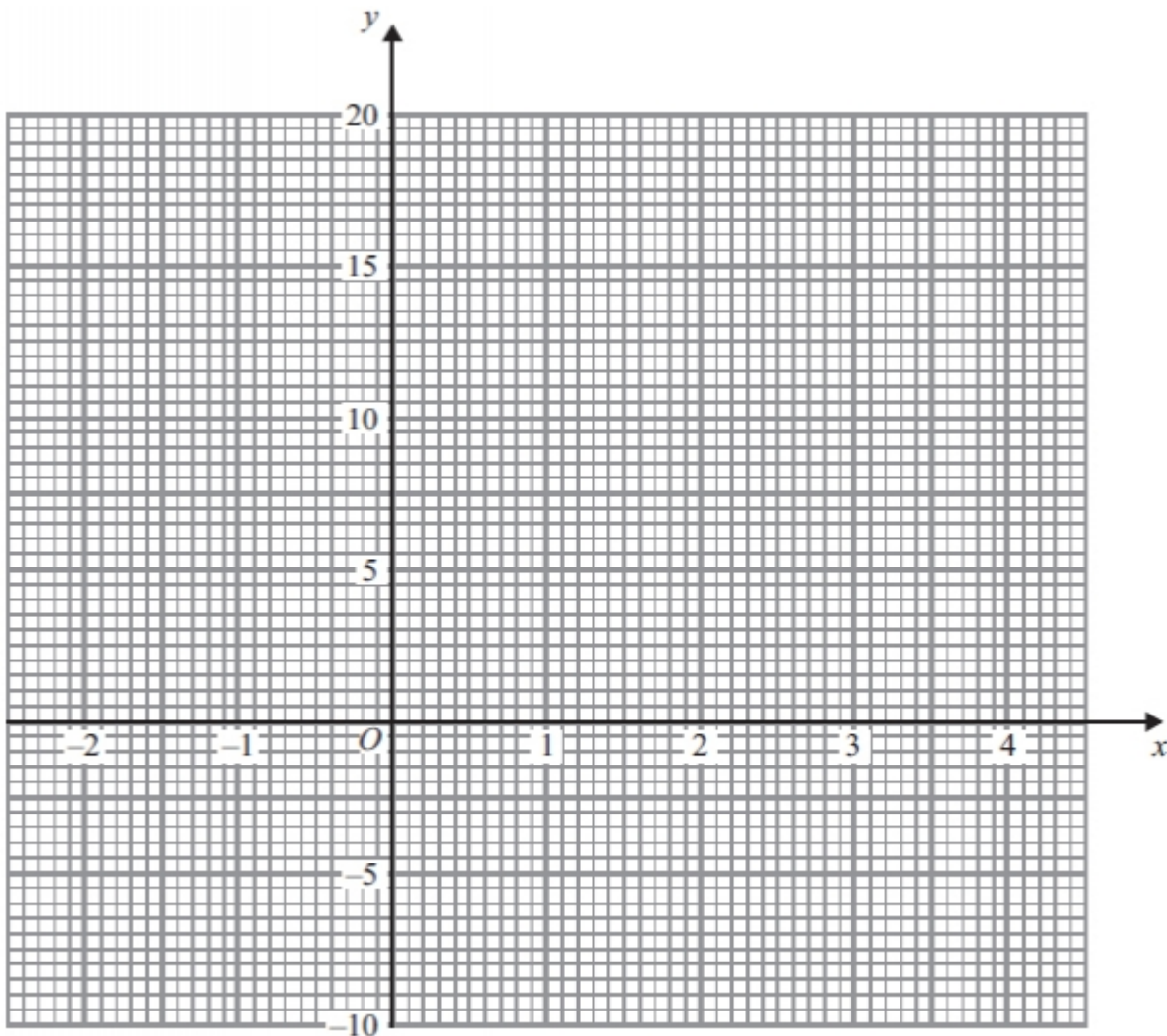
.....

(1)

**(Total for question = 3 marks)**

Q7.

On the grid, draw the graph of  $y = 4x - 1$  from  $x = -2$  to  $x = 4$



**(Total for question is 4 marks)**

**Q8.**

(a) Simplify  $5c \times 4c$

.....  
(1)

(b) Factorise  $4x + x^2$

.....  
(2)

(c) Work out the value of  $y^3 + 5y$  when  $y = 2$

.....  
(2)

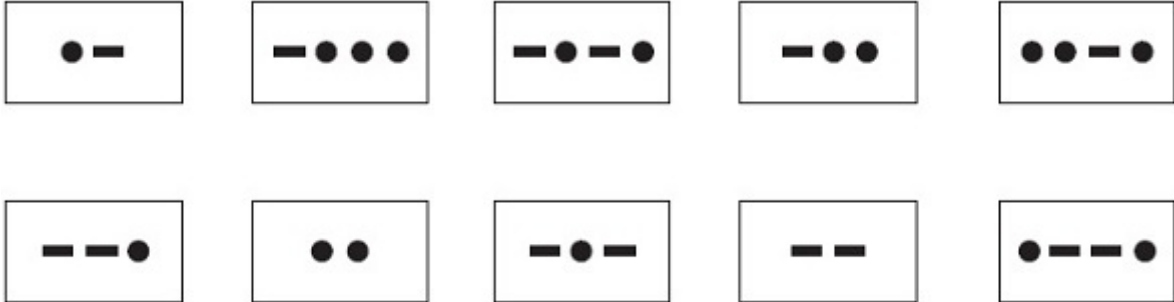
**(Total for Question is 5 marks)**

**Q9.**

Morse Code uses dots (●) and dashes (—) to represent each letter of the alphabet.

Here are 10 cards.

Each card has the Morse Code for a letter on it.



- (a) Kelly has the 10 cards.  
She takes at random one of the cards.

Find the probability that she takes a card with

- (i) 4 dots,

.....

- (ii) exactly 1 dot,

.....

- (iii) 2 dots or 3 dots.

.....

(5)

- (b) Hashim has the 10 cards.  
He takes at random a card 200 times.  
He replaces the card each time.  
Work out an estimate for the number of times he will take a card with exactly 2 dots.

.....

(2)

**(Total for Question is 7 marks)**

**Q10.**

(a) Simplify  $\frac{5x^5y^6}{x^2y^4}$

.....  
(2)

(b) Simplify  $(2n^4)^3$

.....  
(2)

**(Total for question is 4 marks)**

**Q11.**

(i) Solve the inequalities  $-6 < 4x \leq 8$

(ii)  $n$  is an integer.

Write down all the values of  $n$  which satisfy  $-6 < 4n \leq 8$

.....

.....

**(Total for question is 4 marks)**



**Q12.**

(a) Expand and simplify

(i)  $5(2x + 1) - 3(3x - 1)$

.....

(ii)  $(y + 5)(y - 7)$

.....

(4)

(b) Make  $r$  the subject of the formula  $V = \pi r^2 h$  where  $r$  is positive.

$r =$  .....

(2)

**(Total for question = 6 marks)**

**Q13.**

Solve  $x = \frac{7 - 2x}{3}$

Show clear algebraic working.

$x =$  .....

**(Total for question = 3 marks)**

Q14.

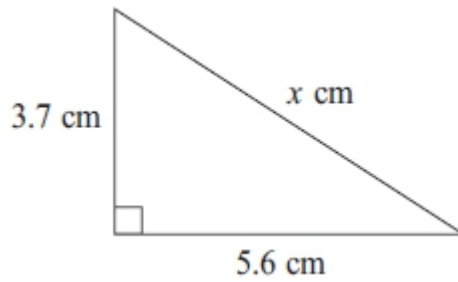


Diagram NOT accurately drawn

Work out the value of  $x$ .  
Give your answer correct to 3 significant figures.

$x = \dots\dots\dots$

(Total for question = 3 marks)

Q15.

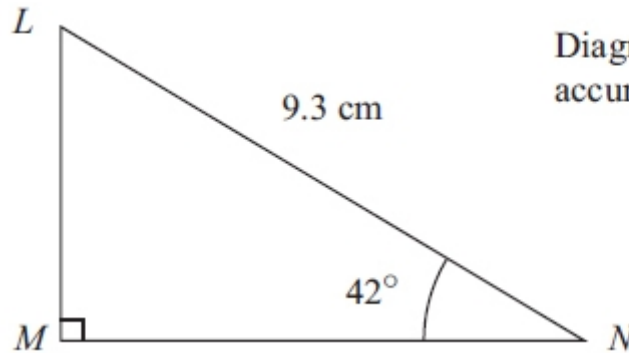


Diagram NOT accurately drawn

Calculate the length of  $LM$ .  
Give your answer correct to 3 significant figures.

$\dots\dots\dots$  cm

(Total for question = 3 marks)

END OF TEST