



**SCHOLARSHIP EXAMINATION**

**MATHEMATICS**

**2015**

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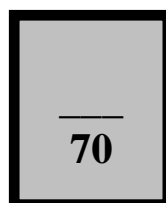
Time: 1 hour

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**Name:** .....

**School:** .....

**Non Calculator**



1. Using the information that

$$74 \times 234 = 17\,316$$

write down the value of

(a)  $740 \times 234$

.....  
(1)

(b)  $74 \times 2.34$

.....  
(1)

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**(Total for Question 1 is 2 marks)**

2. Find the answers to these. Give the answer as a mixed number or as a fraction in its simplest form.

a)  $3\frac{2}{3} - 2\frac{1}{2} =$

(2)

b) What is  $\frac{5}{3} \times \left[ 3 - 1\frac{3}{7} \right]$ ?

(3)

**(Total for Question 2 is 5 marks)**

3. Work out an estimate for the value of  $\frac{31 \times 4.92}{0.21}$

.....  
(3)

(Total for Question 3 is 3 marks)

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4. Write 325 as a product of its prime factors.

.....  
(Total for Question 4 is 2 marks)

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5. Winston is a property developer. He bought a house for £125000. He did the house up and sold it to Minnie for a 30% profit.

a) What price did Minnie pay for the house ?

**(2)**

b) Minnie kept the house for a year but property prices started falling. She eventually sold it and made a 30% loss. How much did Minnie sell the house for ?

**(2)**

**(Total for Question 5 is 4 marks)**

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6. Bill and Ben work as a team. How much will they earn in 12 hours if Bill is paid £  $\frac{2}{3}$  for each  $\frac{8}{9}$  hours he works and Ben is paid £  $\frac{5}{6}$  for each  $\frac{4}{7}$  hours ?

.....  
**(Total for Question 6 is 4 marks)**

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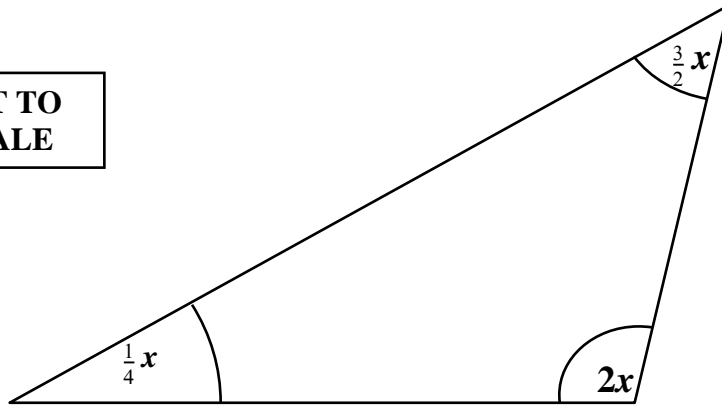
7. What is 5% of 60 plus 20% of 35 plus 30% of 140 subtract 50% of 30 ?

**(Total for Question 7 is 3 marks)**

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8. By considering the triangle below, find the value of  $x$ .

**NOT TO  
SCALE**



.....  
(Total for Question 8 is 4 marks)

9. (a) Solve

$$3(2t - 4) = 2t + 12$$

$$t = \dots\dots\dots$$

**(2)**

(b) Expand and simplify

$$2(x - y) - 3(x - 2y)$$

$$\dots\dots\dots$$

**(3)**

**(Total for Question 9 is 5 marks)**

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10. Solve the simultaneous equations

$$6x + 2y = -3$$

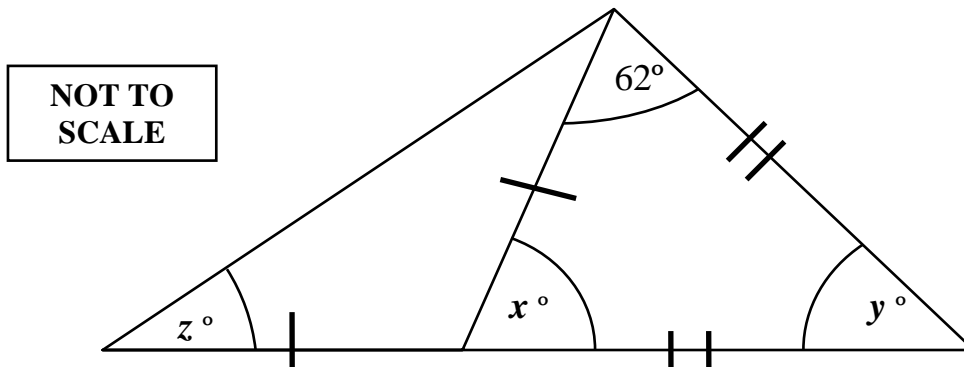
$$4x - 3y = 11$$

$$x = \dots\dots\dots, y = \dots\dots\dots$$

**(Total for Question 10 is 4 marks)**

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11. Find the values of  $x$ ,  $y$  and  $z$ .



(Total for Question 11 is 4 marks)

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12. Five numbers have a mode of 7, a median of 8, a mean of 8.2 and a range of 3. What are the five numbers ?

(Total for Question 12 is 4 marks)

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13.  $y = p - 2qx^2$

$$p = -10$$

$$q = 3$$

$$x = 5$$

(a) Work out the value of  $y$ .

.....  
(3)

(Total for Question 13 is 3 marks)

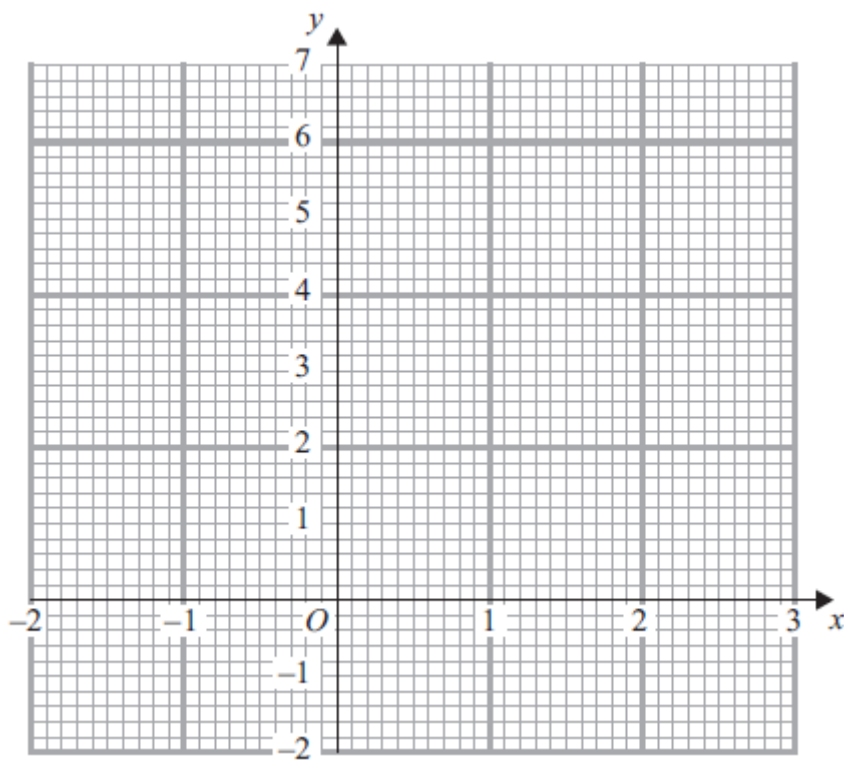
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14. (a) Complete the table of values for  $3x + 2y = 6$

$x$	-2	-1	0	1	2	3
$y$		4.5	3			-1.5

(2)

(b) On the grid, draw the graph of  $3x + 2y = 6$



(2)

(Total for Question 14 is 4 marks)

15.  $-2 \leq n < 5$   
 $n$  is an integer.

(a) Write down all the possible values of  $n$ .

.....  
(2)

(b) Solve the inequality  $4x + 1 > 11$

.....  
(2)

(Total for Question 15 is 4 marks)

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16. (a) Simplify  $m^3 \times m^6$

.....  
(1)

(b) Simplify  $\frac{p^8}{p^2}$

.....  
(1)

(Total for Question 16 is 2 marks)

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17. The bearing of point B from point A is  $050^\circ$ . What is the bearing of A from B?

.....  
(2)

(Total for Question 17 is 2 marks)

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18. (a) Expand  $d(3d - 7)$

.....  
(1)

(b) Factorise  $y^2 + 7y$

.....  
(2)

(c) Expand and simplify  $3(x + 5) - 2(4x - 2)$

.....  
(2)

(d) Solve  $5(x + 3) = 8$

$x =$  .....  
(2)

(Total for Question 18 is 7 marks)

19.  $\frac{4}{x} + \frac{1}{y} = \frac{3}{z}$

$x = 2\frac{1}{3}, y = 3\frac{1}{2}$

(a) Find the value of  $z$ .

.....  
(4)

(Total for Question 19 is 4 marks)

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END OF PAPER