ST EDWARD'S
OXFORD

13+ ENTRANCE EXAMINATION

For entry in
September 2017

Mathematics

Time: 1 hour

Candidates Name: ……

Instructions

- 70 Marks
- 1 Hour
- Calculators are NOT allowed

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1. Work out

(i) $2 \times 3 + 4$

……

(ii) $10 - 2 \times 5$

……

(iii) $16 \div (2 \times 4)$

……

(Total 3 marks)

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2. The cost of 1.5 kg of peaches is £0.84

The total cost of 3 kg of peaches and 2 kg of apples is £2.34

Work out the cost of 1 kg of apples.

……...

(Total 3 marks)

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3. (a) Linda gets 24 out of 40 in a science test.

Write 24 out of 40 as a percentage.

.....%

(2)

(b) Write these numbers in order of size.
Start with the smallest number.

$0.82 \qquad \frac{4}{5} \qquad 85\% \qquad \frac{2}{3} \qquad \frac{7}{8}$

.....

(2)

(Total 4marks)

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4. (a) Work out £3.75 × 24

£ .....

(3)

(b) Divide £135 by 20

£ .....

(3)
(Total 6 marks)

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5. Martin had to buy some cleaning materials.

The cost of the cleaning materials was £64.00 plus VAT at 17 $\frac{1}{2}$%.

Work out the total cost of the cleaning materials.

£ .....

(Total 2 marks)

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6. (a) Write 24 as a fraction of 36
Give your answer in its simplest form.

.....

(2)

(b) Change $\frac{3}{5}$ into a decimal.

.....

(2)
(Total 4 marks)

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7. (a) Work out $\frac{2}{5}+\frac{3}{8}$

……

(2)

(b) Work out $5\frac{2}{3}-2\frac{3}{4}$

……

(3)
(Total 5 marks)

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8. There are 21 questions in a science test.
Each question is on biology or on chemistry or on physics.

The numbers of questions on biology, chemistry and physics are in the ratios 4 : 2 : 1

(i) What fraction of the questions are on chemistry?

.....

(ii) Work out the number of questions that are on biology.

.....
(Total 5 marks)

9.

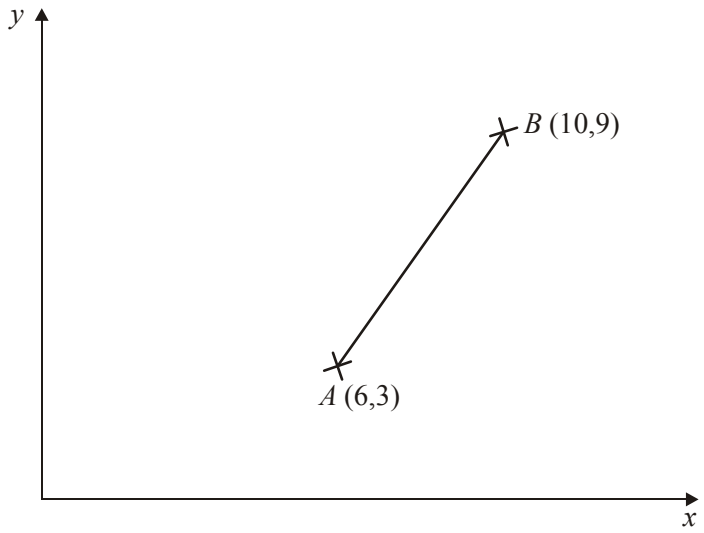


Diagram **NOT** accurately drawn

A is the point with coordinates (6, 3).
B is the point with coordinates (10, 9).

M is the midpoint of the line *AB*

Work out the coordinates of the point *M*.

(....., ...)

(Total 2 marks)

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10. (a) Simplify

(i) $\dfrac{x^6}{x^2}$

.....

(ii) $(y^4)^3$

.....

(2)

(b) Write down the integer values of x that satisfy the inequality

$$-2 \leq x < 4$$

.....

(2)

(Total 4 marks)

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11. (a) Expand and simplify $5(3p + 2) – 2(5p – 3)$

.....

(2)

(b) Expand and simplify $(x + 7)(x – 4)$

.....

(2)

(c) Expand $y(y^3 + 2y)$

.....

(2)

(c) Factorise completely $6x^2 – 9xy$

.....

(2)

(Total 8 marks)

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12. (a) Solve $4x + 3 = 19$

x =.....

(2)

(b) Solve $5(2y + 3) = 20$

y = ...

(3)

(c) Solve $4y + 1 = 2y + 8$

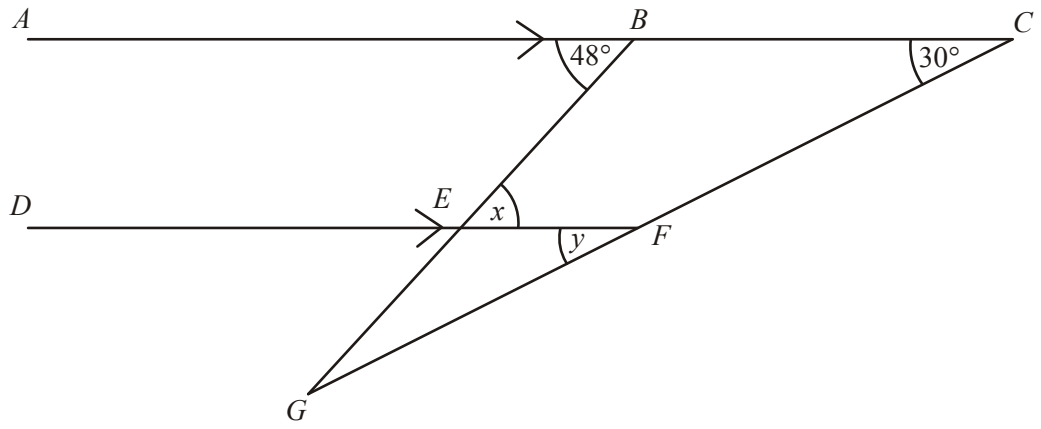
y =.....

(2)

(Total 7 marks)

13.

Diagram **NOT** accurately drawn



BEG and *CFG* are straight lines.
ABC is parallel to *DEF*.
Angle *ABE* = 48°.
Angle *BCF* = 30°.

(a) (i) Write down the size of the angle marked *x*.

x = ...°

(ii) Give a reason for your answer.

.....

(2)

(b) (i) Write down the size of the angle marked *y*.

y = ...°

(ii) Give a reason for your answer.

.....

(2)
(Total 4 marks)

14.

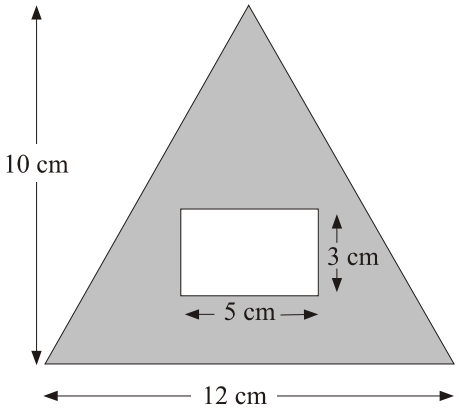


Diagram **NOT** accurately drawn

The diagram shows a rectangle inside a triangle.

The triangle has a base of 12 cm and a height of 10 cm.
The rectangle is 5 cm by 3 cm.

Work out the area of the region shown shaded in the diagram.

..... cm^2

(Total 3 marks)

15.

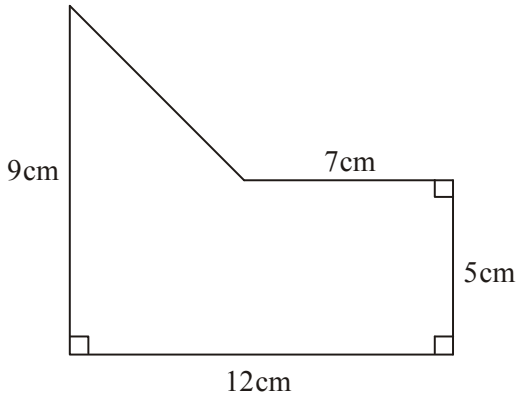


Diagram **NOT** accurately drawn

Work out the area of the shape.

..... cm^2

(Total 4 marks)

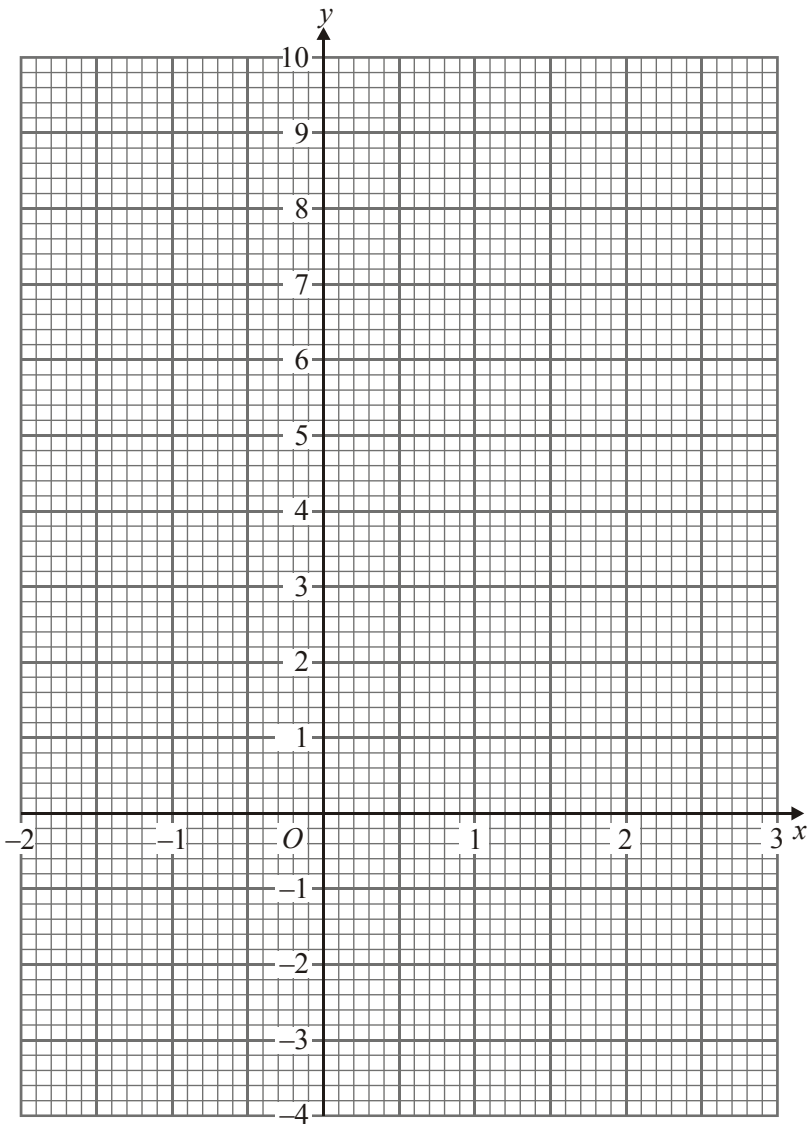
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16. (a) Complete the table of values for y = 2*x* + 3

x	–2	–1	0	1	2	
y		1	3			

(2)

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



(2)

(c) Use your graph to find

(i) the value of *y* when *x* = –1.3

y = ...

(ii) the value of *x* when *y* = 5.4

x = ...

(2)
(Total 6 marks)

End of Paper