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

---

1. Work out

    (i) $2 \times 3 + 4$

    …………………………

    (ii) $10 - 2 \times 5$

    …………………………

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

    …………………………
    (Total 3 marks)

---

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)

---

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 $\dfrac{4}{5}$ 85% $\dfrac{2}{3}$ $\dfrac{7}{8}$

    ....
    (2)
    (Total 4marks)

4. (a) Work out £3.75 × 24

£ ....

(3)

(b) Divide £135 by 20

£ ....

(3)

(Total 6 marks)

---

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)

---

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)

---

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

………………………

(2)

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

………………………

(3)

(Total 5 marks)

---

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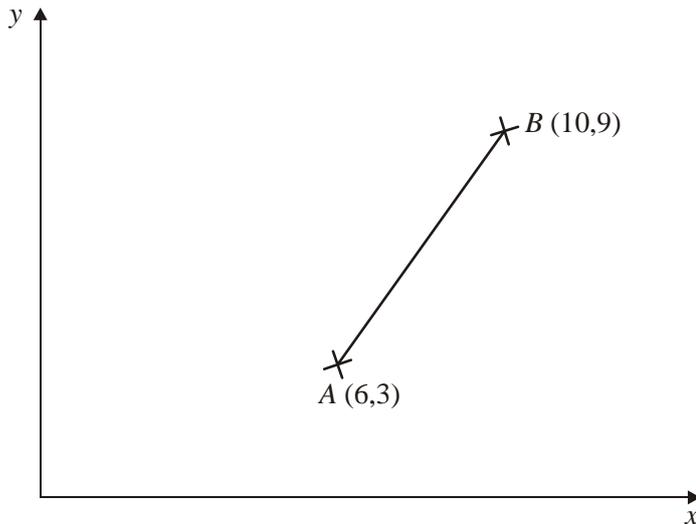
A is the point with coordinates (6, 3).
B is the point with coordinates (10, 9).

M is the midpoint of the line *AB*

Work out the coordinates of the point *M*.

(..........., ...)

(Total 2 marks)

---

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

$$-2 \le x < 4$$

....

(2)

(Total 4 marks)

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)

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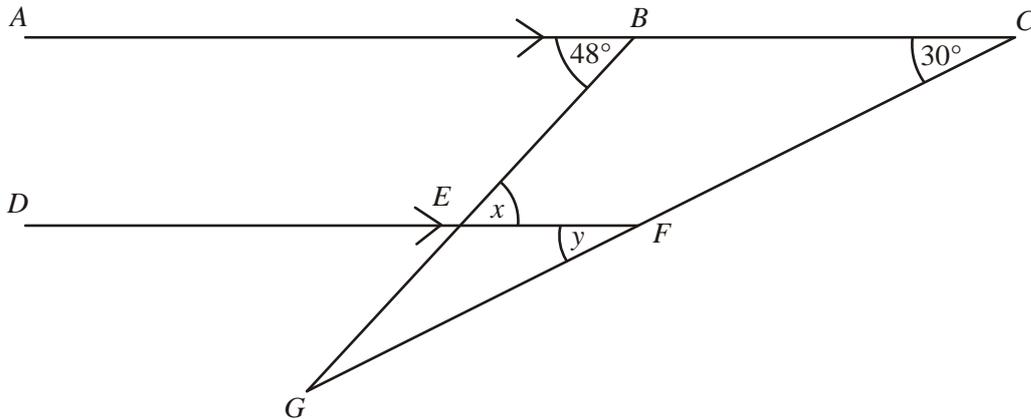
BEG and *CFG* are straight lines.
ABC is parallel to *DEF*.
Angle *ABE* = 48°.
Angle *BCF* = 30°.

(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.
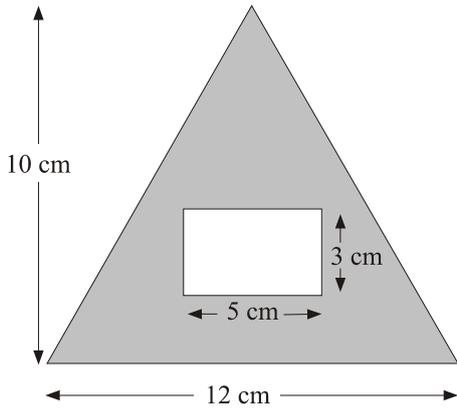
Diagram **NOT** accurately drawn

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.
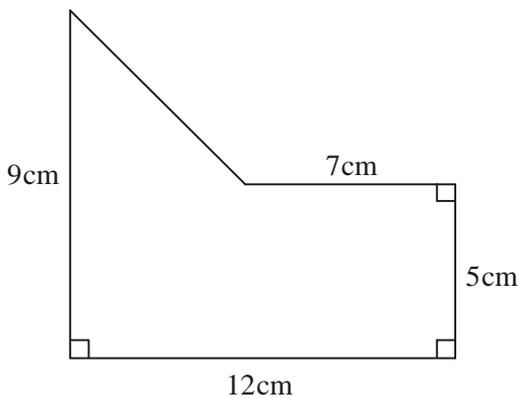
Diagram **NOT** accurately drawn

Work out the area of the shape.

.... cm^2

(Total 4 marks)

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

x	−2	−1	0	1	2	
y		1	3			

(2)

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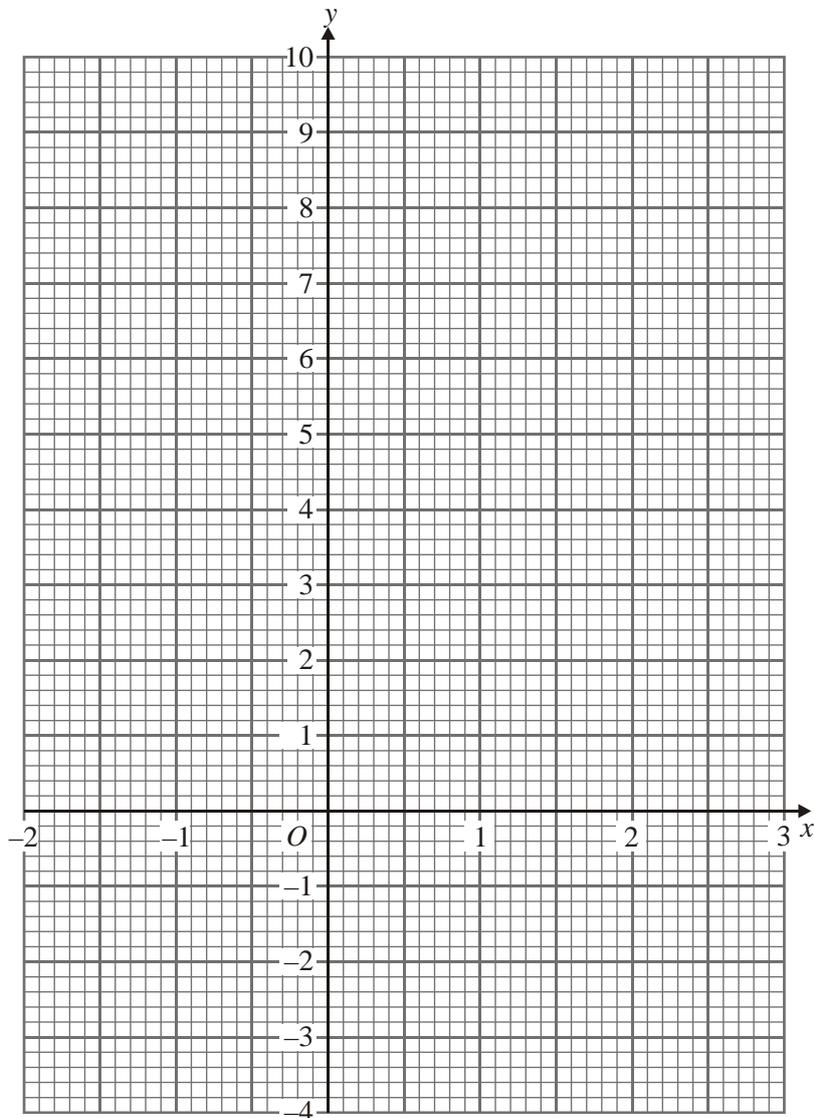
(2)

(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