Write your name here

Surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Mathematics A

Paper 1FR

Foundation Tier

Tuesday 6 January 2015 – Afternoon
Time: 2 hours

Paper Reference
4MA0/1FR

You must have:
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – there may be more space than you need.
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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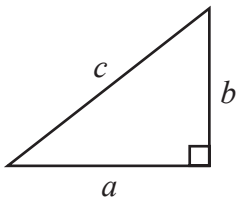
P 4 4 6 1 7 A 0 1 2 0

PEARSON

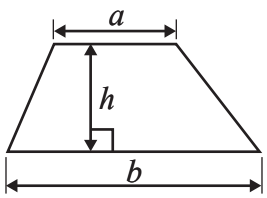
International GCSE MATHEMATICS

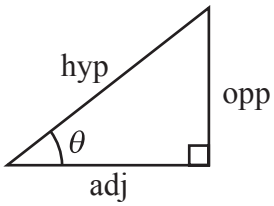
FORMULAE SHEET – FOUNDATION TIER

Pythagoras' Theorem
$a^2 + b^2 = c^2$



Area of a trapezium = $\frac{1}{2}(a + b)h$





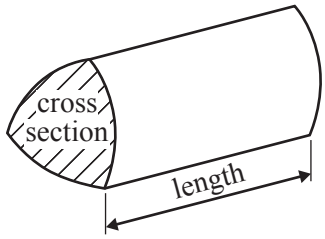
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

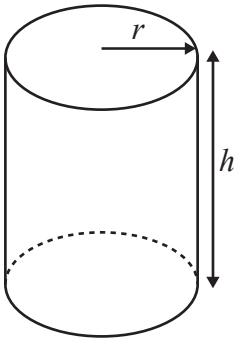
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



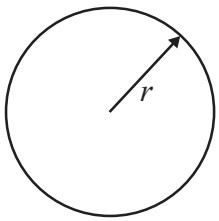
Circumference of circle = $2\pi r$

Area of circle = πr^2



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



Answer ALL TWENTY TWO questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write in figures the number **fourteen thousand and twenty six**.

.....

(1)

(b) Write the number 6539 correct to the nearest hundred.

.....

(1)

(c) Write down the value of the 2 in the number 12 430

.....

(1)

(d) Write a number on the dotted line so that the calculation is correct.

$282 + \ldots\ldots\ldots\ldots = 650$

(1)

The International Commerce Centre in Hong Kong is 484 metres tall.
The Burj Khalifa building in Dubai is 346 metres **taller** than the International Commerce Centre.

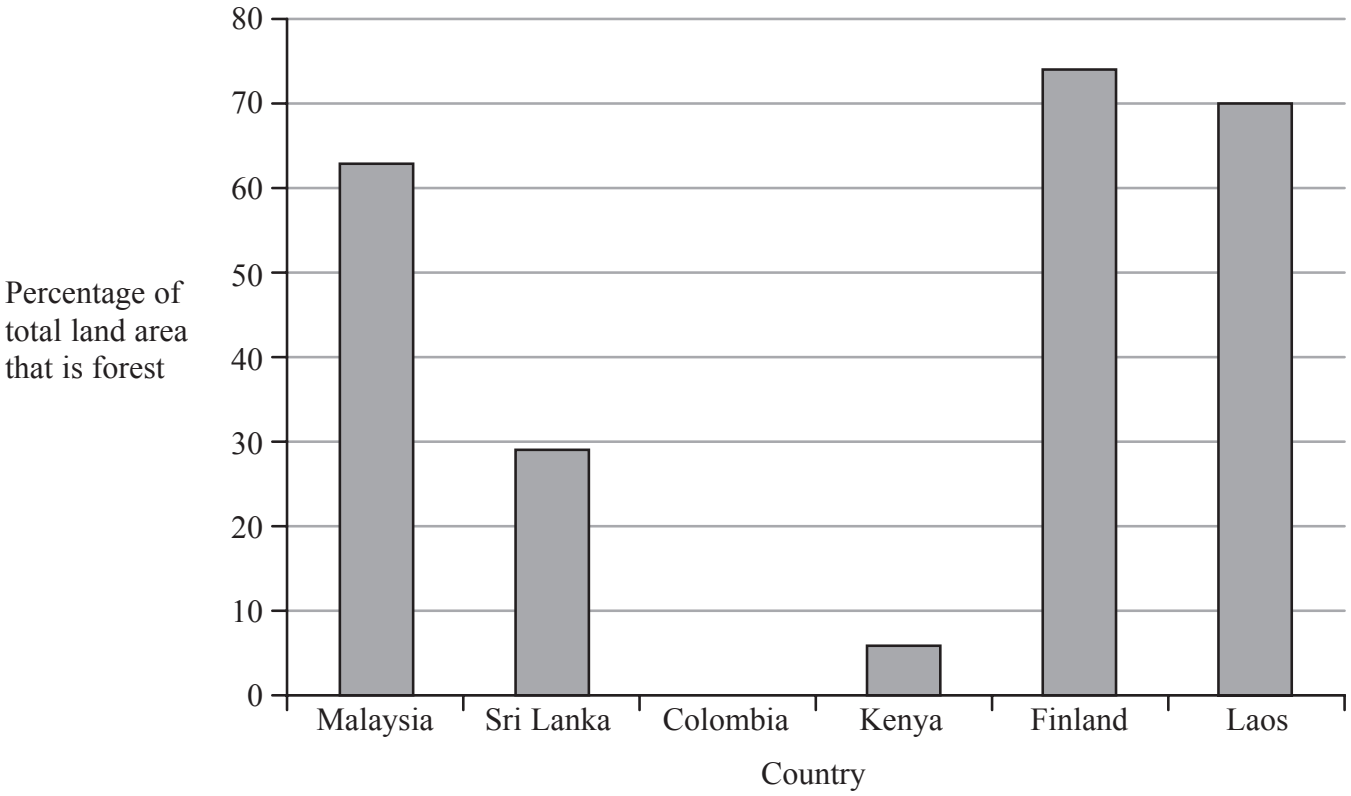
(e) Work out the height of the Burj Khalifa building.

..... metres

(1)

(Total for Question 1 is 5 marks)

2 The bar chart shows the percentage of the total land area of five countries that is forest.



(a) (i) Write down the percentage of the total land area in Laos that is forest.

..... %

(ii) Change your answer to part (i) to a fraction.
Give your fraction in its simplest form.

.....

(3)

(b) Write down the name of the country whose forest area is 29% of its total land area.

.....

(1)

55% of Colombia's total land area is forest.

(c) (i) Draw a bar on the bar chart to show this information.

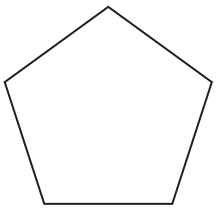
(ii) What percentage of Colombia's total land area is **not** forest?

..... %

(2)

(Total for Question 2 is 6 marks)

3 (a) The diagram shows a regular polygon.



(i) Write down the mathematical name of this polygon.

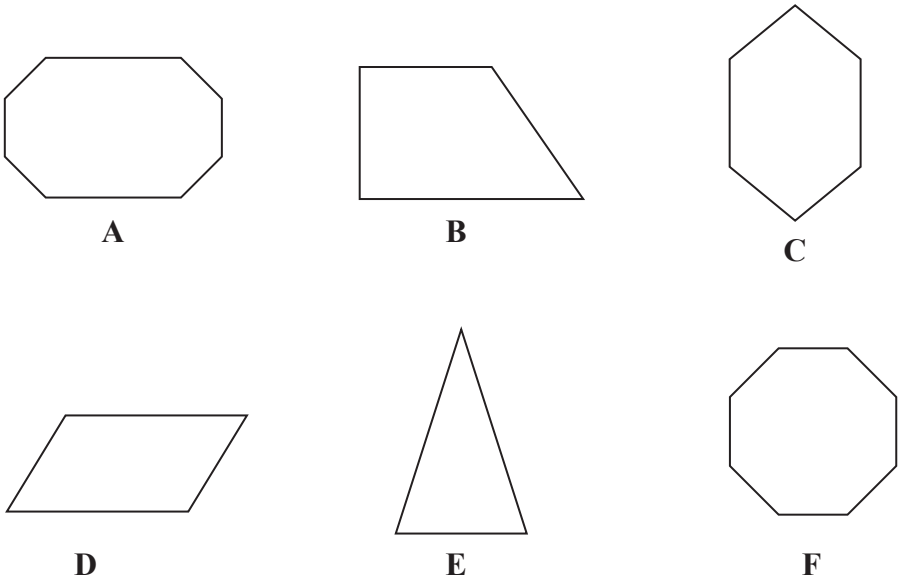
.....

(ii) Write down the order of rotational symmetry of this polygon.

.....

(2)

(b) Here are six more polygons.



(i) Write down the letter of the polygon that has exactly one line of symmetry.

.....

(ii) Write down the letters of the two polygons that have rotational symmetry of order 2 **and** exactly 2 lines of symmetry.

..... , ...

(3)

(Total for Question 3 is 5 marks)

4 (a) Which two of these numbers are even numbers?

5 9 12 15 19 26 27

..... , ...

(2)

(b) Write down a multiple of 8 that is between 10 and 30

.....

(1)

(c) Write down all the factors of 40

.....

(2)

(d) Which two of these numbers are prime numbers?

15 21 27 29 33 37 39

..... , ...

(2)

(Total for Question 4 is 7 marks)

Do NOT write in this space.

5 Here are the first five terms of a number sequence.

17 21 25 29 33

(a) Write down the next two terms of the sequence.

..... , ...

(2)

(b) Explain how you found your terms.

.....

(1)

(c) Work out the 12th term of the sequence.

.....

(1)

(d) Explain why 70 is not a term of this sequence.

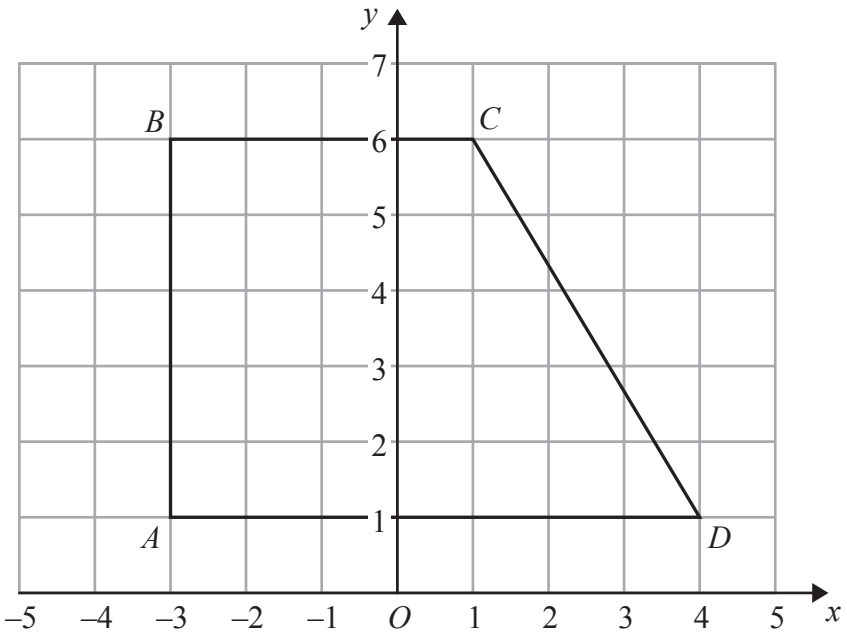
.....

(1)

(Total for Question 5 is 5 marks)

Do NOT write in this space.

6 The diagram shows a quadrilateral *ABCD* drawn on a centimetre grid.



(a) Write down the coordinates of the point *C*.

(..... , ...)

(1)

(b) Measure the length of *CD*.

.....cm

(1)

(c) Work out the perimeter of quadrilateral *ABCD*.

.....cm

(2)

(Total for Question 6 is 4 marks)

Do NOT write in this space.

7 Here are the number of goals scored by a netball team in each of its first 9 games of the season.

5 8 5 2 2 1 3 2 8

(a) Find the mode.

.....

(1)

(b) Work out the range.

.....

(2)

(c) Work out the mean number of goals scored.

.....

(2)

(d) The number of goals scored by the team in its 10th game was 7

(i) Will the mean number of goals scored in all 10 games be more, less or the same as the mean found in (c)?

Tick (✓) the appropriate box.

more	less	the same
☐	☐	☐

(ii) Give a reason for your answer.

.....

.....

(2)

(Total for Question 7 is 7 marks)

8 (a) Solve $x + 4 = 17$

$x =$ .....

(1)

(b) Simplify $4e + 6f + 3e - 2f$

.....

(2)

(c) Factorise $6w + 15$

.....

(1)

(d) Expand and simplify $(x + 4)(x + 7)$

.....

(2)

(Total for Question 8 is 6 marks)

Do NOT write in this space.

9

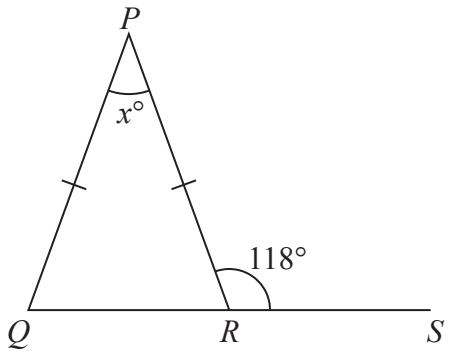


Diagram **NOT** accurately drawn

PQR is an isosceles triangle.
QRS is a straight line.
PQ = *PR*.
Angle *PRS* = 118°

Work out the value of *x*.

x = ...

(Total for Question 9 is 3 marks)

10 In a school, there are 320 girls and 500 boys.

(a) Write down the ratio of the number of girls to the number of boys.
Give your ratio in its simplest form.

.....

(2)

In a different school, there is a total of 640 children.
In this school, the ratio of the number of girls to the number of boys is 7 : 9

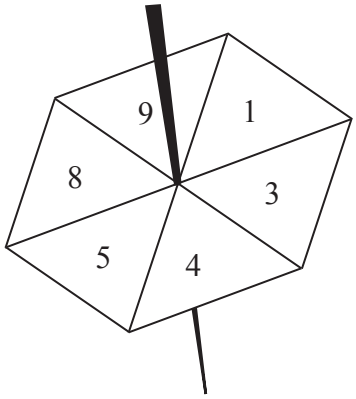
(b) How many boys are there in this school?

.....

(2)

(Total for Question 10 is 4 marks)

11 Here is a fair 6-sided spinner.



The sections of the spinner are labelled 1, 3, 4, 5, 8, 9

Hamid spins the spinner once.

(a) Write down the probability that the spinner will land on

(i) 3

.....

(ii) 2

.....

(iii) a number less than 7

.....

(3)

Hamid also has a biased dice.
The probability that the dice will land on the number 6 is 0.7

(b) Find the probability that the dice will **not** land on the number 6

.....

(1)

Hamid throws the dice 80 times.

(c) Work out an estimate for the number of times that the dice will land on the number 6

.....

(2)

(Total for Question 11 is 6 marks)

12 The diagram shows a rectangle and a right-angled triangle.

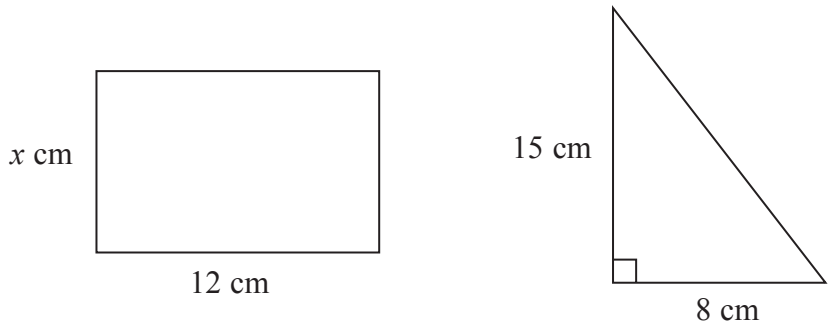


Diagram **NOT** accurately drawn

The area of the rectangle is the same as the area of the triangle.

Work out the value of x.

$x =$ .....

(Total for Question 12 is 3 marks)

13 $M = 4g - 3h$

(a) Work out the value of M when $g = -5$ and $h = 8$

$M =$ .....

(2)

(b) Work out the value of g when $M = 30$ and $h = 6$

$g =$ .....

(3)

(Total for Question 13 is 5 marks)

14 The table shows information about the numbers of goals scored by some football teams last week.

Number of goals	Number of teams
0	5
1	8
2	2
3	3
4	2

Work out the total number of goals scored by these football teams last week.

.....

(Total for Question 14 is 2 marks)

15 (a) Use your calculator to work out the value of

$$125^2 + \frac{173}{9.3 - 6.8}$$

Give your answer as a decimal.

.....

(2)

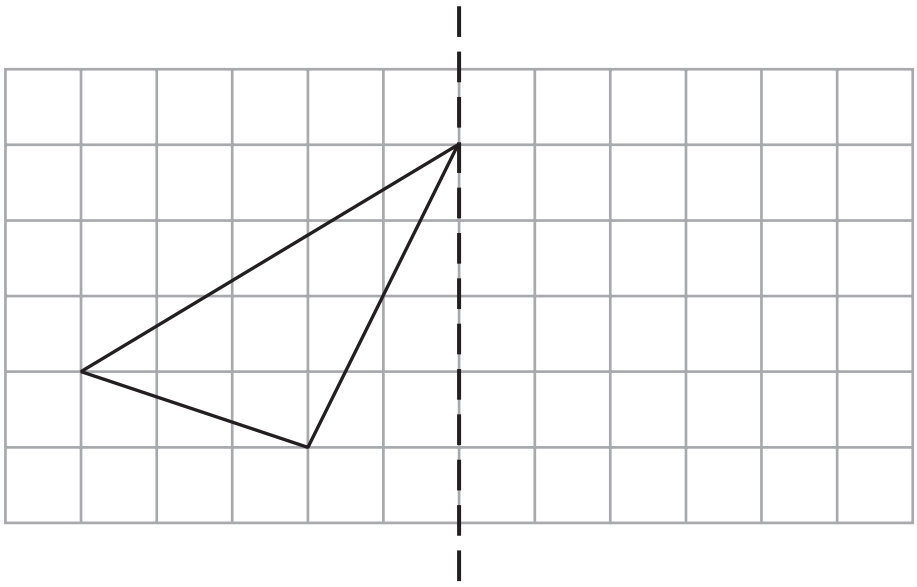
(b) Write your answer to part (a) correct to 3 significant figures.

.....

(1)

(Total for Question 15 is 3 marks)

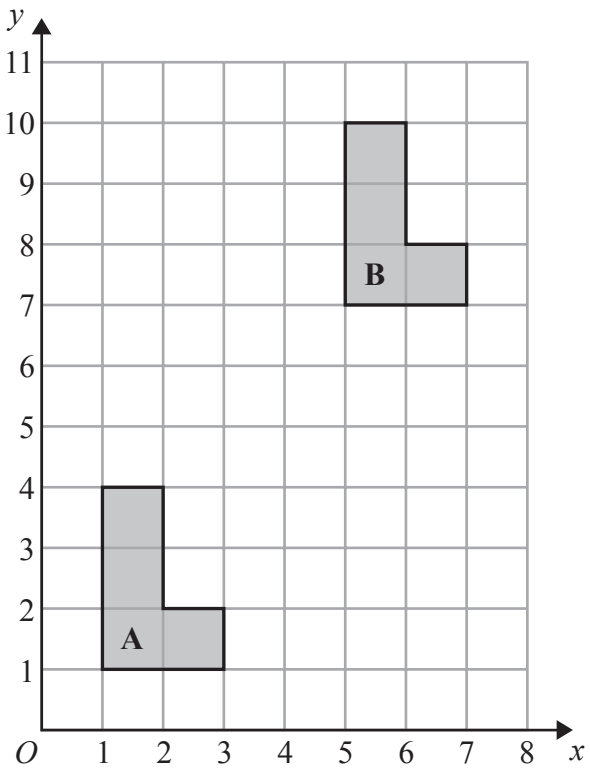
16



mirror line

(a) On the grid, reflect the shape in the mirror line.

(1)



(b) Describe fully the single transformation that maps shape **A** onto shape **B**.

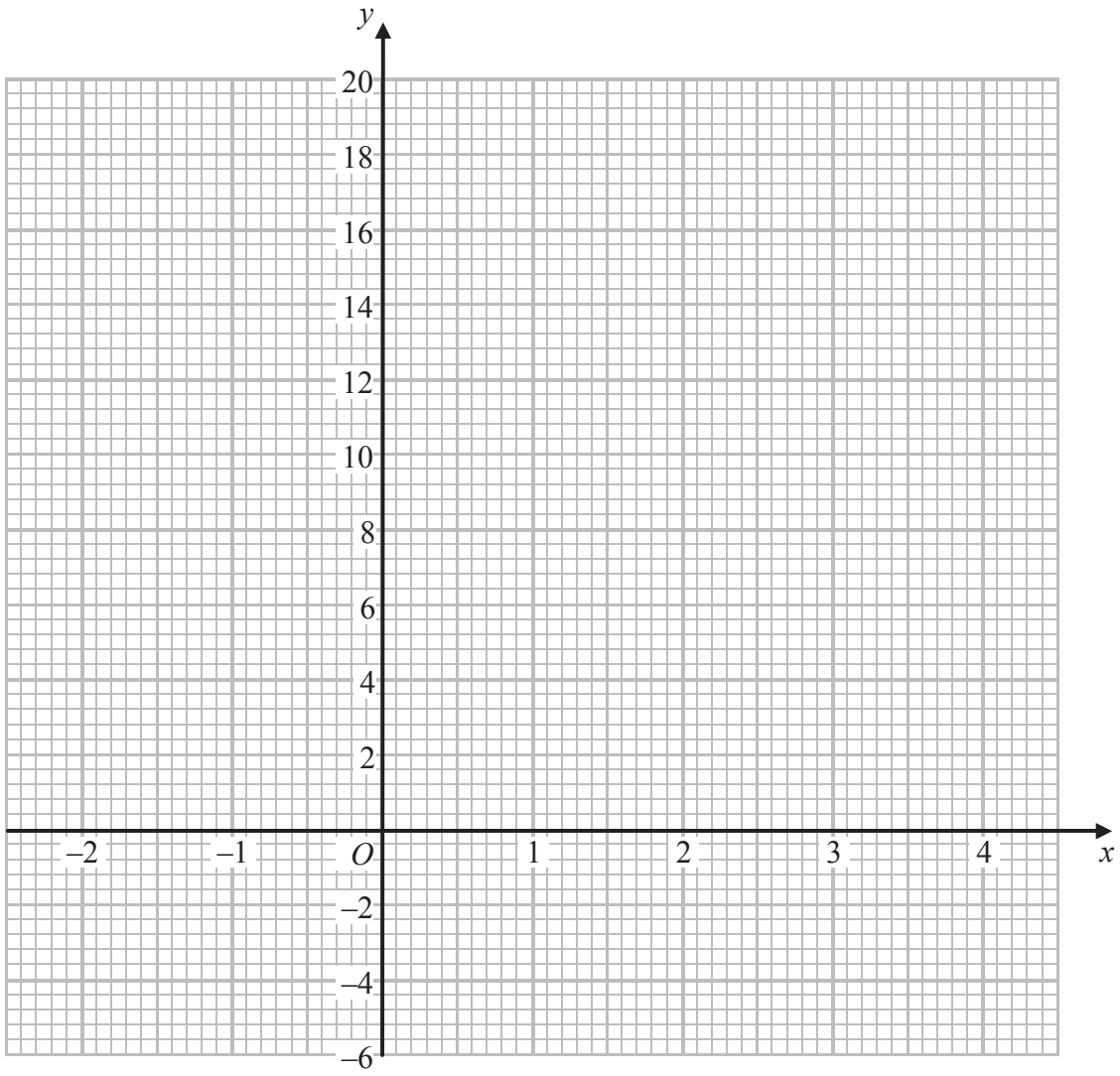
.....

.....

(2)

(Total for Question 16 is 3 marks)

17 On the grid, draw the graph of $y = 3x + 2$ for values of x from -2 to 4



(Total for Question 17 is 4 marks)

18 Lisa sees a dress in a sale.
The normal price of the dress is \$45
The price of the dress is reduced by 12% in the sale.

(a) Work out the price of the dress in the sale.

\$ .....

(3)

Lisa's weekly pay increases from \$525 to \$546

(b) Calculate her percentage pay increase.

..... %

(3)

(Total for Question 18 is 6 marks)

19 Show that $7\frac{1}{2} - 4\frac{2}{3} = 2\frac{5}{6}$

(Total for Question 19 is 3 marks)

20 The diagram shows a solid cylinder.

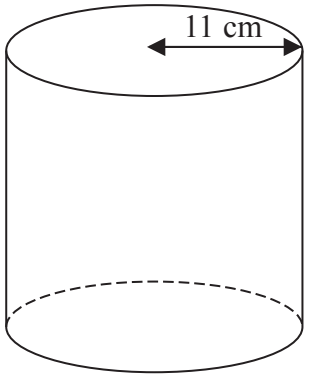


Diagram **NOT** accurately drawn

The cylinder has a height of 30 cm and a radius of 11 cm.

(a) Work out the **total** surface area of the cylinder.
Give your answer correct to 2 significant figures.

..... cm^2

(4)

(b) The height of the cylinder is 30 cm, correct to the nearest centimetre.

(i) Write down the lower bound of the height of the cylinder.

..... cm

(ii) Write down the upper bound of the height of the cylinder.

..... cm

(2)

(Total for Question 20 is 6 marks)

21 Solve $3(x - 5) = 7x + 12$
Show clear algebraic working.

$x =$ .....

(Total for Question 21 is 3 marks)

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22

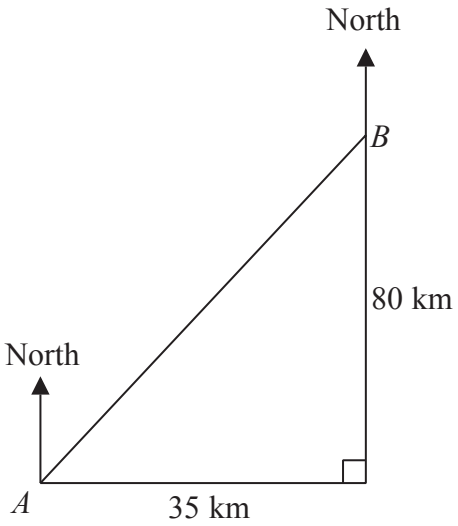

Diagram **NOT** accurately drawn

Town B is 35 km east and 80 km north of town A.

Work out the bearing of town A from town B.
Give your answer correct to the nearest degree.

.....°

(Total for Question 22 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

Do NOT write in this space.