**10** The line **L** is drawn on the grid.
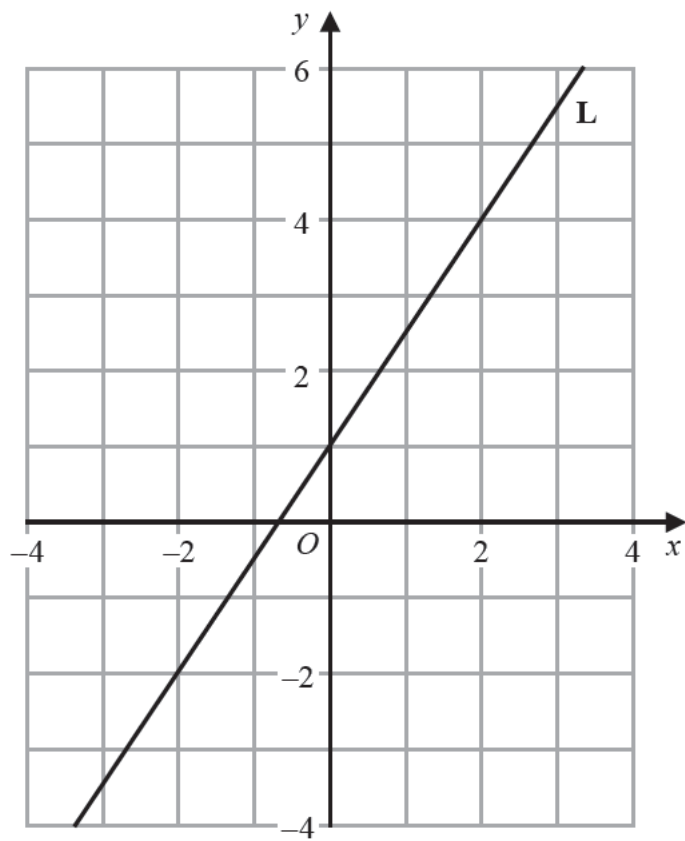


Find an equation for **L**.

**(Total for Question 10 is 3 marks)**

**11** Twenty students took a Science test and a Maths test.

Both tests were marked out of 50

The table gives information about their results.

| | Median | Interquartile range |
|---|---|---|
| **Science** | 27 | 18 |
| **Maths** | 24.5 | 11 |

Use this information to compare the Science test results with the Maths test results.
Write down **two** comparisons.

1

2

**(Total for Question 11 is 2 marks)**

**12** (a) Simplify $n^0$

(1)

(b) Simplify $(3x^2y^5)^3$

(2)

(c) Factorise fully $2e^2 - 18$

(2)

(d) Make $r$ the subject of $m = \sqrt{\dfrac{6a + r}{5r}}$

(4)

**(Total for Question 12 is 9 marks)**

**13** The frequency table gives information about the numbers of mice in some nests.

| Number of mice | Frequency |
|:---:|:---:|
| 5 | 4 |
| 6 | 13 |
| 7 | 16 |
| 8 | $x$ |
| 9 | 6 |

The mean number of mice in a nest is 7

Work out the value of $x$.

$x = $ .............................................

**(Total for Question 13 is 4 marks)**

**14** Marcus plays two games of tennis.
For each game, the probability that Marcus wins is 0.35

(a) Complete the probability tree diagram.

**First game**                    **Second game**

Marcus
wins

Marcus
wins

0.35

Marcus
does not
win

Marcus
wins

Marcus
does not
win
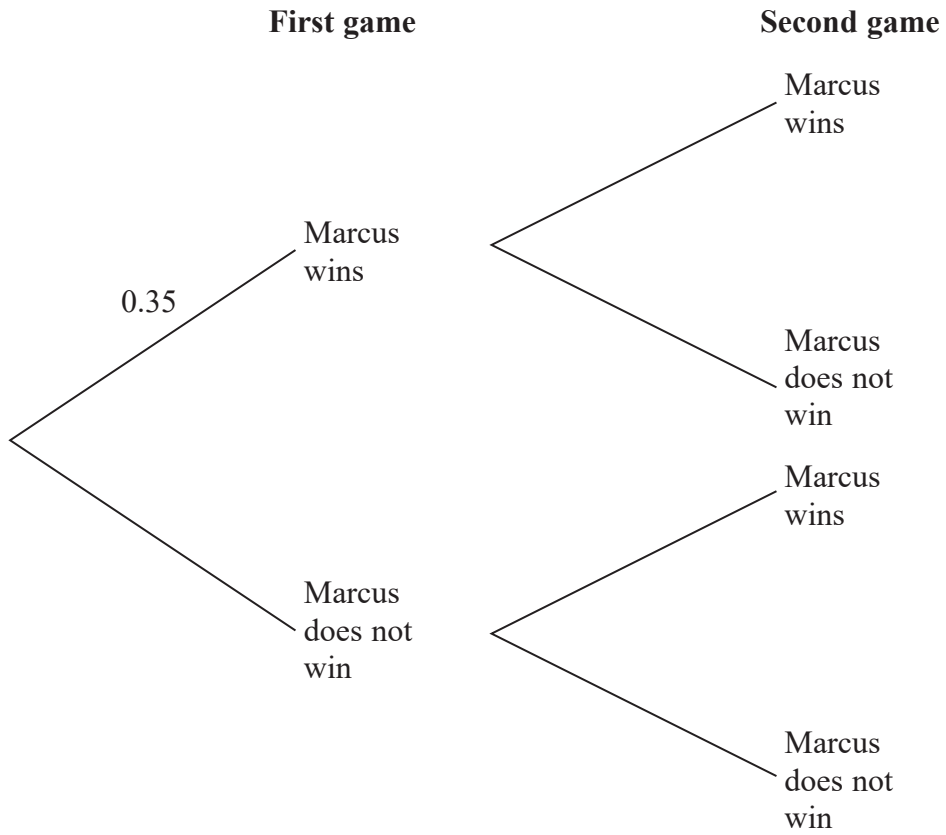
Marcus
does not
win

**(2)**

(b) Work out the probability that Marcus wins at least one of the two games of tennis.

**(3)**

**(Total for Question 14 is 5 marks)**
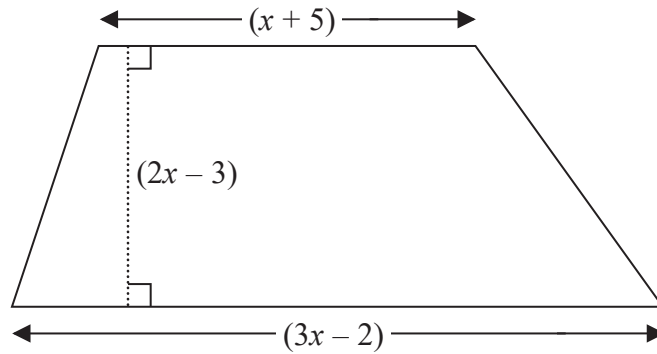
**15** The diagram shows a trapezium.



Diagram **NOT** accurately drawn

All measurements shown on the diagram are in centimetres.

The area of the trapezium is $133\,\text{cm}^2$

(a) Show that $8x^2 - 6x - 275 = 0$

**(3)**

(b) Find the value of $x$.
Show your working clearly.

$x = $

**(3)**

**(Total for Question 15 is 6 marks)**

**16** The diagram shows two mathematically similar vases, **A** and **B**.



Diagram **NOT** accurately drawn

**A**                    **B**
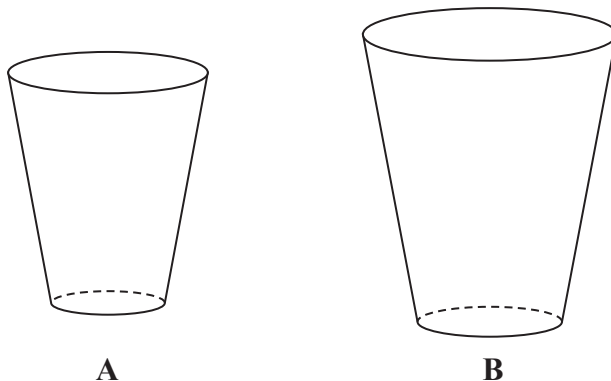
**A** has a volume of 405 cm$^3$
**B** has a volume of 960 cm$^3$

**B** has a surface area of 928 cm$^2$

Work out the surface area of **A**.

cm$^2$

**(Total for Question 16 is 3 marks)**