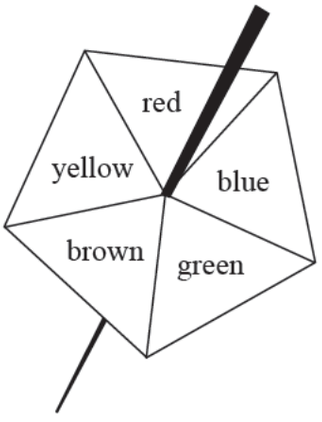
**15** Here is a biased 5-sided spinner.




Kenny spins the spinner once.
The table gives the probabilities that the spinner lands on red or on blue or on green.

| **Colour** | red | blue | green | brown | yellow |
|---|---|---|---|---|---|
| **Probability** | 0.15 | 0.26 | 0.33 | | |

(a) Work out the probability that the spinner lands on red or blue.

**(1)**

When the spinner is spun once, the probability that the spinner lands on brown is 0.06 more than the probability that the spinner lands on yellow.

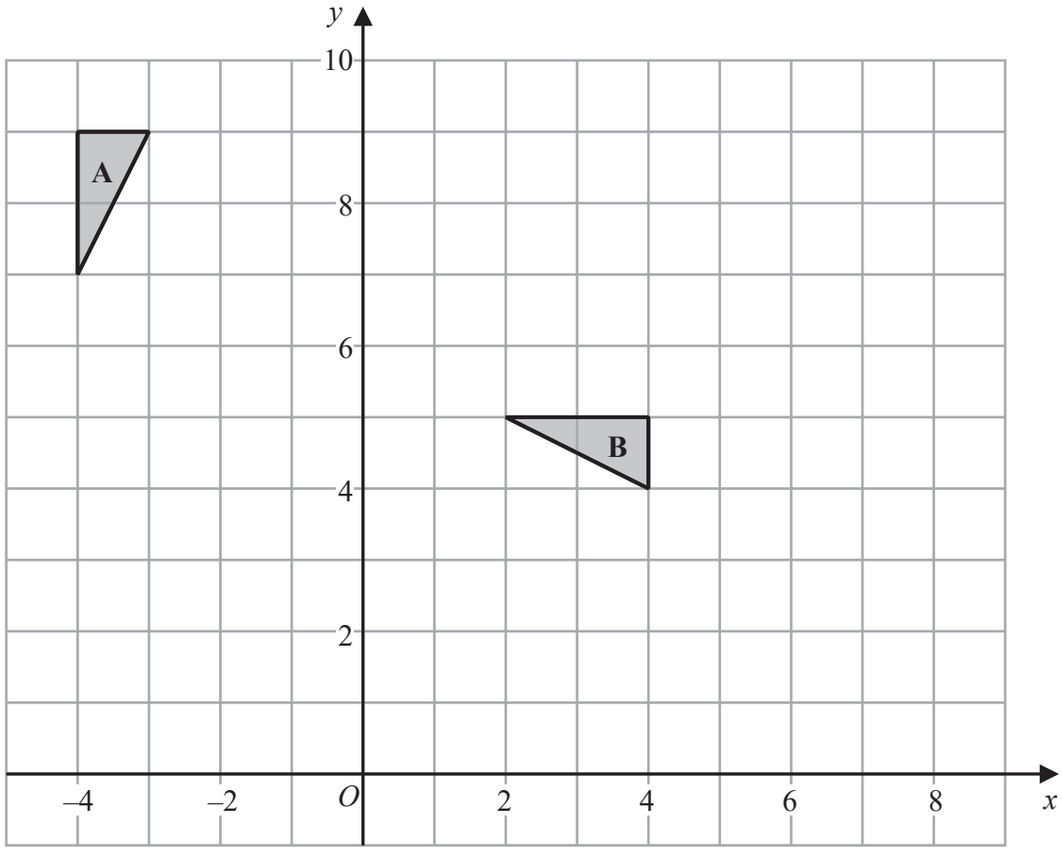
Jenine spins the spinner 150 times.

(b) Work out an estimate for the number of times the spinner lands on yellow.

**(4)**

**(Total for Question 15 is 5 marks)**

**16**



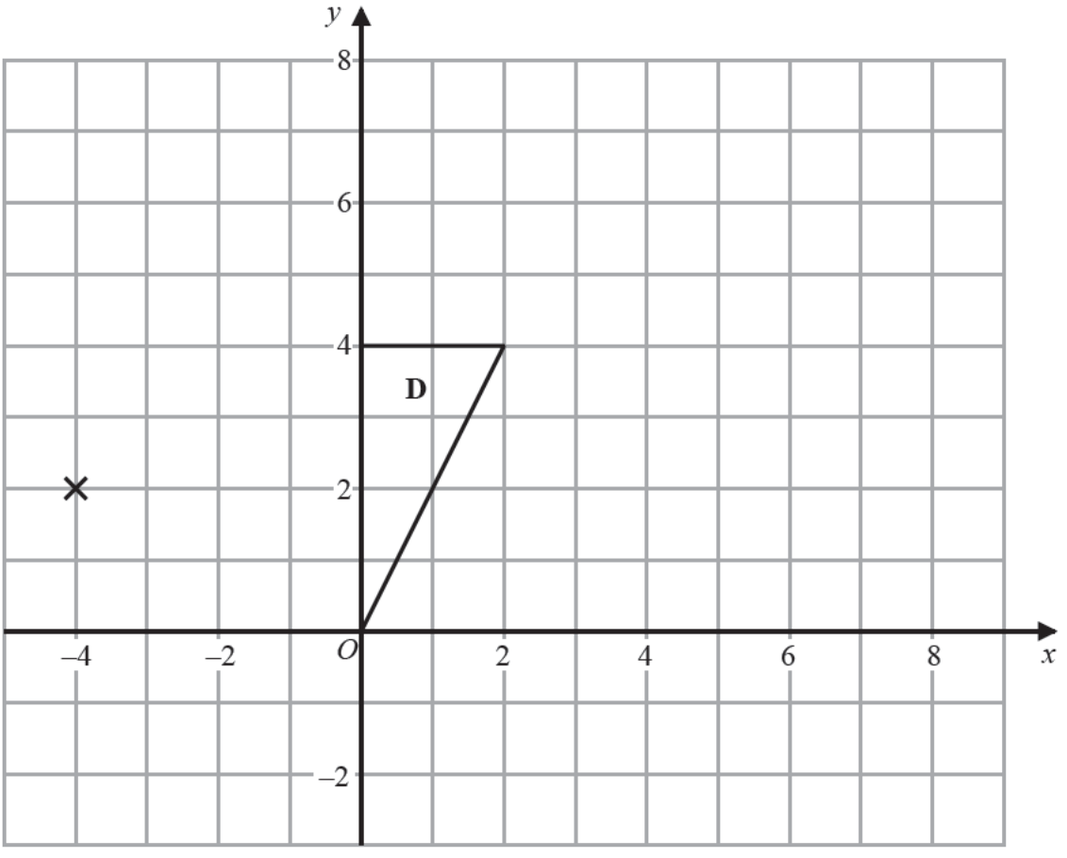

(a) Describe fully the single transformation that maps triangle **A** onto triangle **B**.

**(3)**

(b) On the grid, translate triangle **A** by the vector $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

Label the new triangle **C**.

**(1)**




(c) On the grid, enlarge triangle **D** with scale factor $\frac{1}{2}$ and centre $(-4, 2)$

**(2)**

**(Total for Question 16 is 6 marks)**

**17** The diagram shows an isosceles triangle $ABC$ and a semicircle with centre $O$ and diameter 12 cm.

The point $B$ lies on the semicircle.

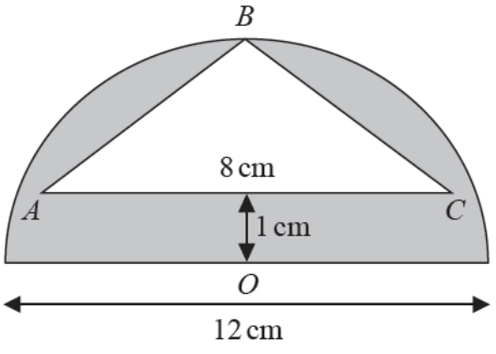



Diagram **NOT** accurately drawn

The line $OB$ is the line of symmetry of the diagram.

$AC$ is 1 cm from the diameter of the semicircle and $AC = 8$ cm.

Work out the area of the shaded region.
Give your answer correct to 3 significant figures.

$\text{cm}^2$

**(Total for Question 17 is 4 marks)**

**18** The table shows the volumes, in $km^3$, of four oceans.

| Ocean | Volume ($km^3$) |
|---|---|
| Arctic Ocean | $1.88 \times 10^7$ |
| Atlantic Ocean | $3.10 \times 10^8$ |
| Indian Ocean | $2.64 \times 10^8$ |
| Southern Ocean | $7.18 \times 10^7$ |

(a) Write $7.18 \times 10^7$ as an ordinary number.

**(1)**

(b) Calculate the total volume of these four oceans.

$km^3$

**(2)**

The volume of the South China Sea is $9\,880\,000\,km^3$

(c) Write 9 880 000 in standard form.

**(1)**

**(Total for Question 18 is 4 marks)**

**19**

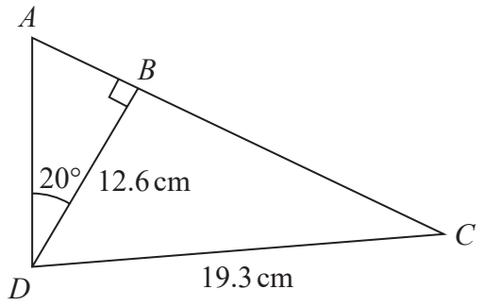



Diagram **NOT** accurately drawn

*ABC* is a straight line.

Work out the length of *AC*.
Give your answer correct to 1 decimal place.

cm

**(Total for Question 19 is 5 marks)**

**20**

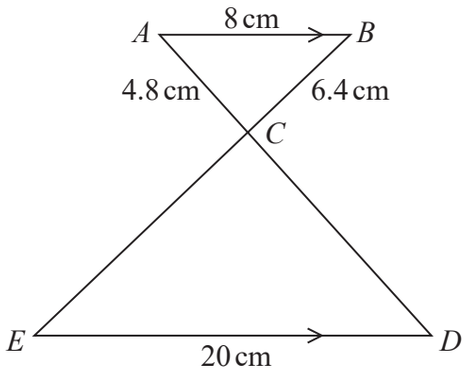



Diagram **NOT** accurately drawn

*AB* is parallel to *ED*.
*ACD* and *BCE* are straight lines.

*AB* = 8 cm
*AC* = 4.8 cm
*BC* = 6.4 cm
*ED* = 20 cm

Work out the length of *BE*.

cm

**(Total for Question 20 is 3 marks)**

**TOTAL FOR PAPER IS 100 MARKS**