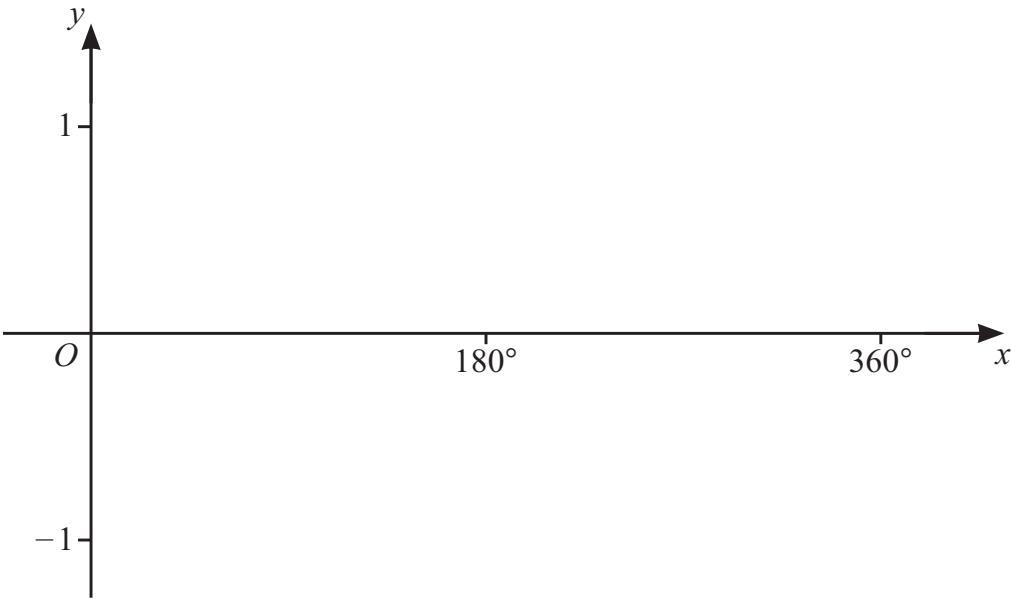


21 (a)



On the diagram, sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$. [2]

(b) Solve the equation $2 \cos x + \sqrt{3} = 0$ for $0^\circ \leq x \leq 360^\circ$.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [3]

22 A graph with equation $y = x^2 + bx + c$ has a minimum point at $(-5, 12)$.

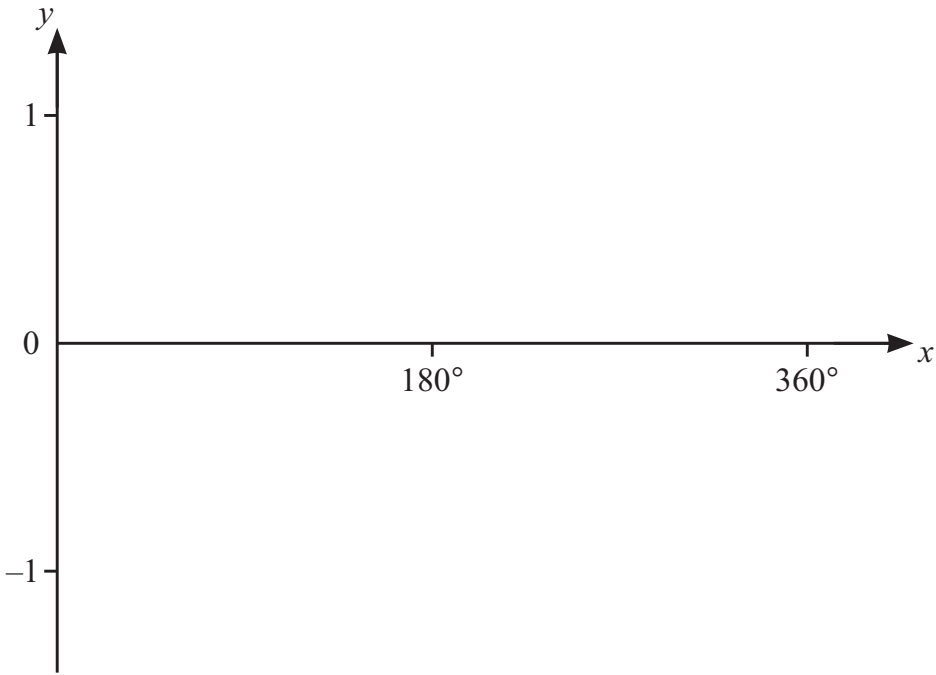
Find the value of b and the value of c .

$b = \dots\dots\dots$

$c = \dots\dots\dots$

[3]

17 (a) Sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$.



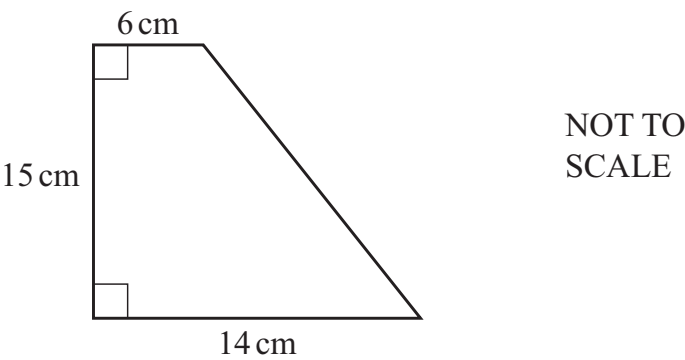
[2]

(b) $\cos x^\circ = \frac{1}{\sqrt{2}}$ and x is a **reflex** angle.

Find the value of x .

$x = \dots\dots\dots$ [2]

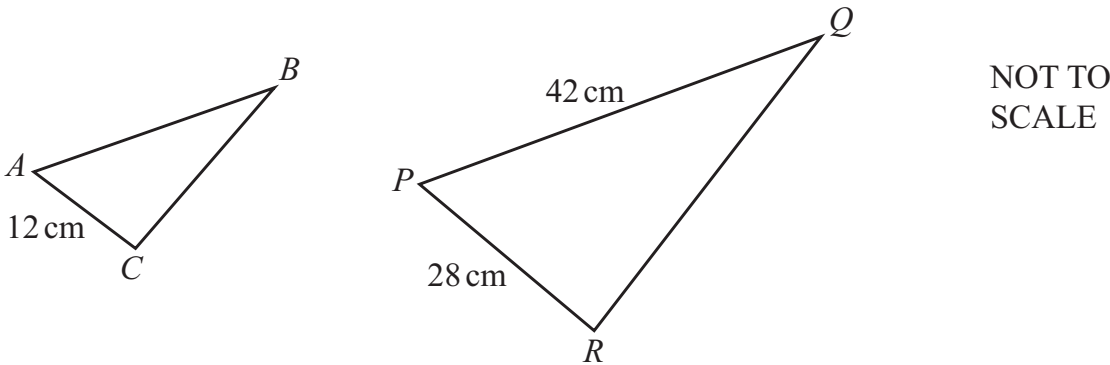
23



Calculate the perimeter of this trapezium.

..... cm [4]

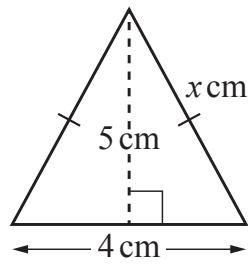
24 Triangles ABC and PQR are mathematically similar.



Calculate AB .

$AB =$ cm [2]

16



NOT TO
SCALE

The diagram shows an isosceles triangle.

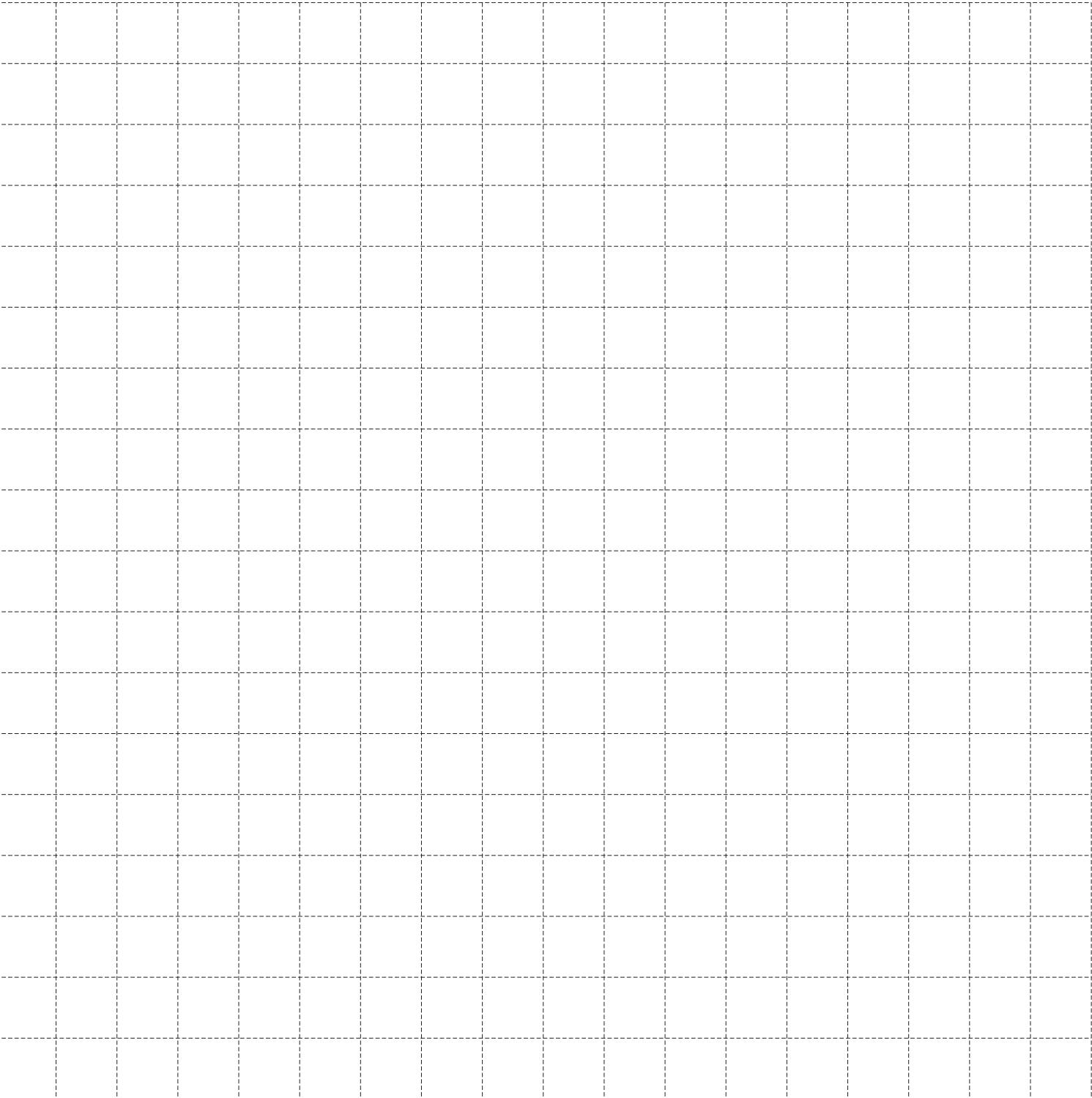
(a) Calculate the value of x .

$x =$ [2]

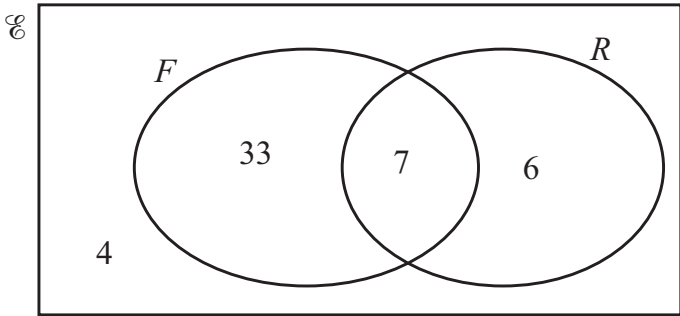
(b) The triangle is one face of a square-based pyramid.

Each triangular face of the pyramid is the same.

On the 1 cm^2 grid, draw a net of this pyramid.



12 Some students are asked if they like football (F) or rugby (R).
The Venn diagram shows the results.

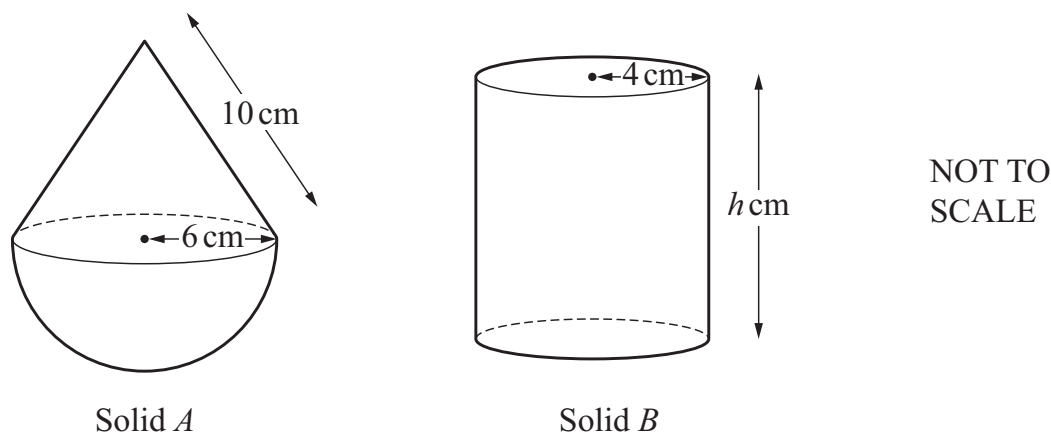


- (a) Find the number of students who do not like rugby.

..... [1]
- (b) Use set notation to describe the region containing students who like rugby but not football.

..... [1]

13



The diagram shows solid *A* and solid *B*.
Solid *A* is made from a hemisphere and a cone each with radius 6 cm.
The cone has sloping edge 10 cm.
Solid *B* is a cylinder with radius 4 cm and height *h* cm.

The **total** surface area of solid *A* is equal to the **total** surface area of solid *B*.

(a) Work out the value of *h*.

$h = \dots\dots\dots$ [5]

(b) Work out the height of solid *A*.

$\dots\dots\dots$ cm [3]

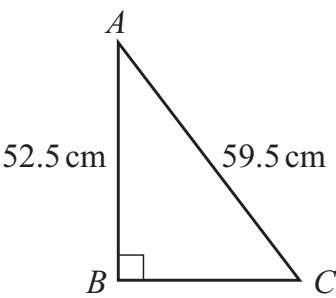
22 (a) Write down the exact value of $\tan 60^\circ$.

..... [1]

(b) Solve $2 \sin x - 1 = 0$ for $0^\circ \leq x \leq 360^\circ$.

$x =$ or $x =$ [3]

21 The diagram shows a right-angled triangle ABC .



NOT TO
SCALE

Calculate BC .

$BC = \dots\dots\dots$ cm [3]

22 (a) Anil invests \$2000 and Baz invests \$7500.

Write the ratio money invested by Anil : money invested by Baz in its simplest form.

$\dots\dots\dots : \dots\dots\dots$ [1]

(b) Kamil and Lavik share some money in the ratio Kamil : Lavik = 5 : 9.
Lavik receives \$72 more than Kamil.

Calculate the total amount of money they share.

\$ $\dots\dots\dots$ [2]

(c) Vanisha invests \$4000 for 5 years at a rate of 3.5% per year compound interest.

Calculate the total interest earned during the 5 years.

\$ $\dots\dots\dots$ [3]