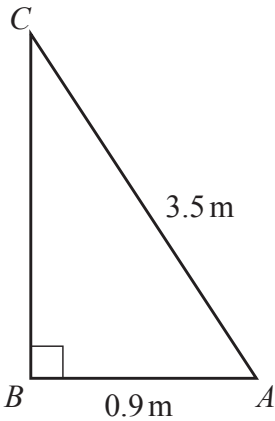


1. Question | 0580 Feb-March 2016 P2 V2 Q3

3



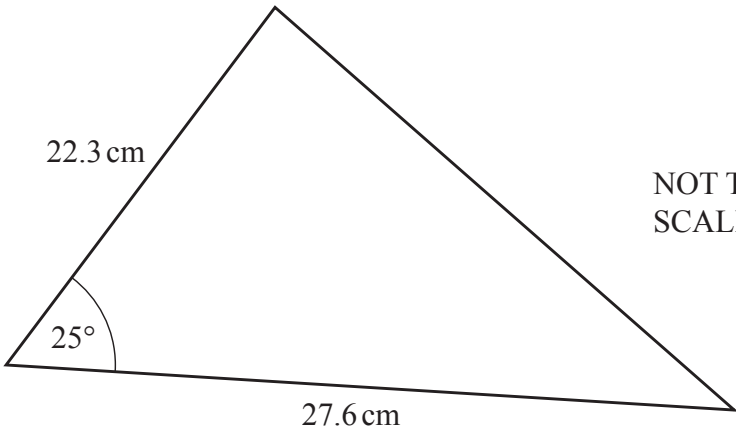
NOT TO
SCALE

Calculate angle BAC .

Angle $BAC = \dots\dots\dots$ [2]

2. Question | 0580 Feb-March 2016 P2 V2 Q7

7

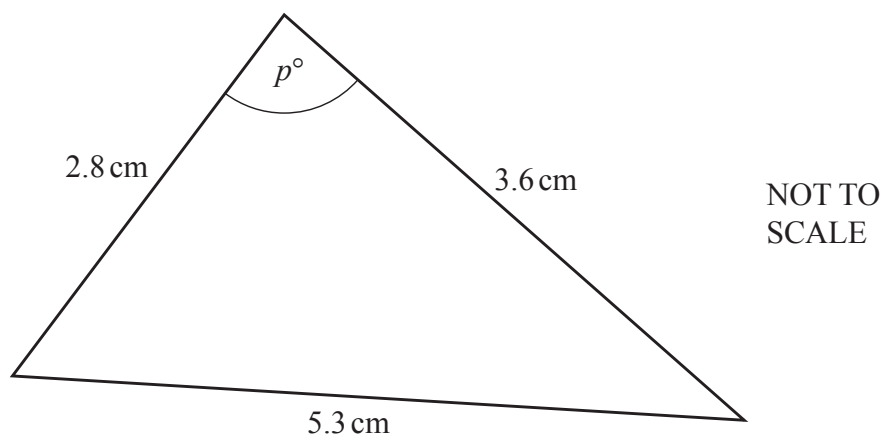


NOT TO
SCALE

Calculate the area of this triangle.

$\dots\dots\dots \text{cm}^2$ [2]

15

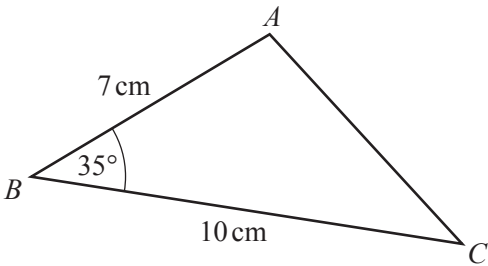


Find the value of p .

$p = \dots\dots\dots [4]$

4. Question | 0580 May-June 2016 P2 V1 Q26

26



NOT TO
SCALE

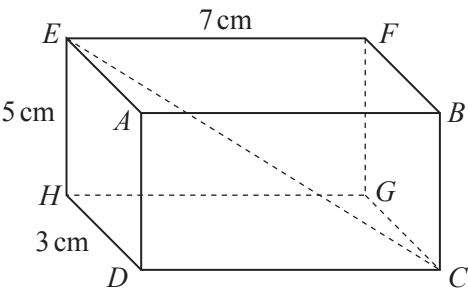
(a) Calculate the area of triangle ABC .

..... cm^2 [2]

(b) Calculate the length of AC .

$AC =$ cm [4]

23



NOT TO
SCALE

The diagram shows a cuboid.
 $HD = 3\text{ cm}$, $EH = 5\text{ cm}$ and $EF = 7\text{ cm}$.

Calculate

(a) the length CE ,

$CE = \dots\dots\dots\text{ cm}$ [4]

(b) the angle between CE and the base $CDHG$.

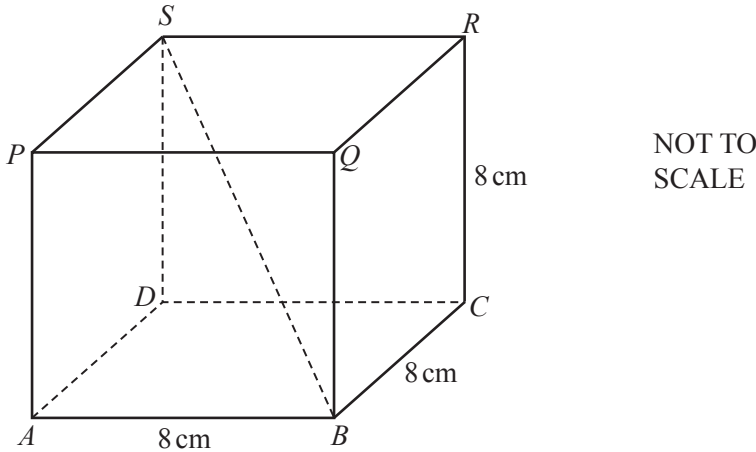
$\dots\dots\dots$ [3]

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24



The diagram shows a cube of side length 8 cm.

(a) Calculate the length of the diagonal BS .

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

(b) Calculate angle SBD .

Angle $SBD = \dots\dots\dots$ [2]

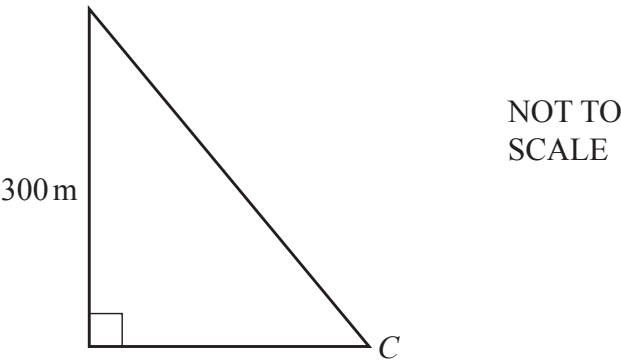
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7. Question | 0580 Oct-Nov 2016 P2 V2 Q9

9 From the top of a building, 300 metres high, the angle of depression of a car, C , is 52° .



Calculate the horizontal distance from the car to the base of the building.

..... m [3]

8. Question | 0580 Oct-Nov 2016 P2 V3 Q10

10 Calculate.

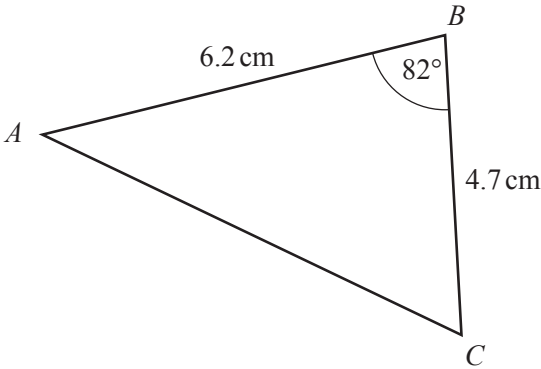
(a) $2^3 - \sqrt{10 + 4^2}$

..... [1]

(b) $\frac{2\sqrt{3} \times \tan 70^\circ}{3}$

..... [1]

21 (a)

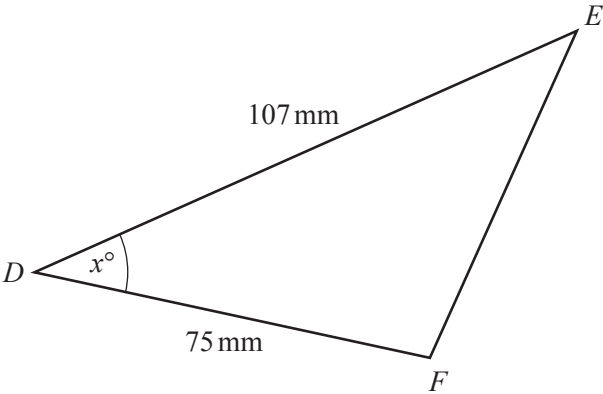


NOT TO
SCALE

Calculate the area of triangle ABC .

.....cm² [2]

(b)



NOT TO
SCALE

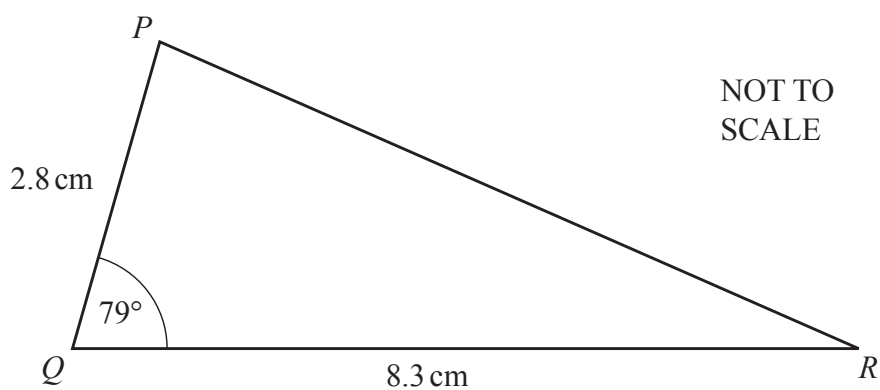
The area of triangle DEF is 2050 mm².

Work out the value of x .

$x =$ [2]

10. Question | 0580 Feb-March 2017 P2 V2 Q19

19



- (a) Calculate the area of triangle PQR .

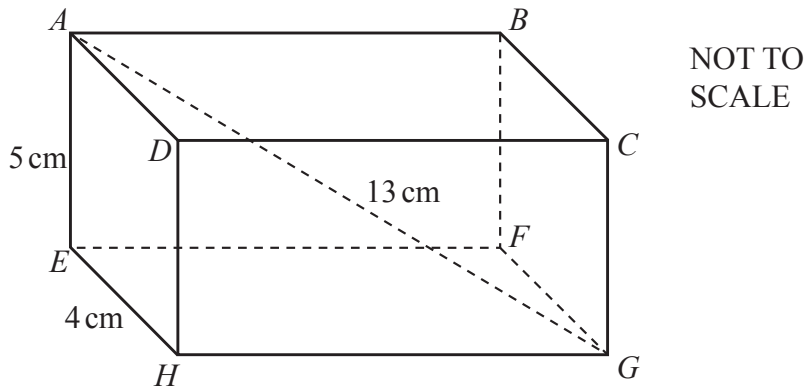
..... cm^2 [2]

- (b) Triangle PQR is enlarged by scale factor 4.5 .

Calculate the area of the enlarged triangle.

..... cm^2 [2]

13

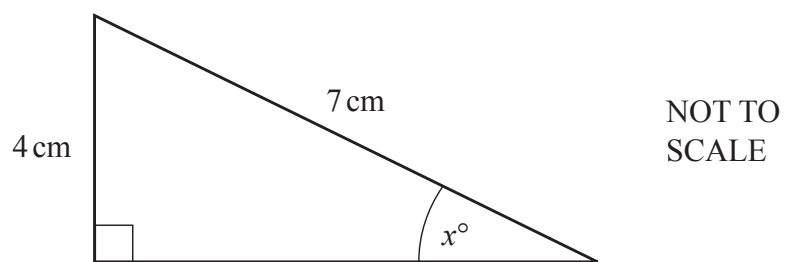


The diagram shows a cuboid $ABCDEFGH$.
 $AE = 5\text{ cm}$, $EH = 4\text{ cm}$ and $AG = 13\text{ cm}$.

Calculate the angle between the line AG and the base $EFGH$ of the cuboid.

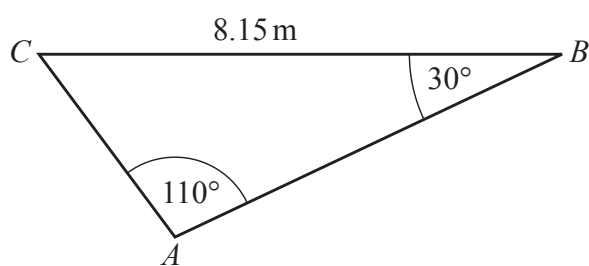
..... [3]

12. Question | 0580 May-June 2017 P2 V2 Q12

12Calculate the value of x . $x = \dots\dots\dots [2]$

13. Question | 0580 May-June 2017 P2 V2 Q17

17

NOT TO
SCALECalculate AC . $AC = \dots\dots\dots\text{ m [3]}$

14. Question | 0580 May-June 2017 P2 V2 Q19

- 19 In a triangle PQR , $PQ = 8\text{ cm}$ and $QR = 7\text{ cm}$.
The area of this triangle is 17 cm^2 .

Calculate the two possible values of angle PQR .

Angle $PQR = \dots\dots\dots$ or $\dots\dots\dots$ [3]

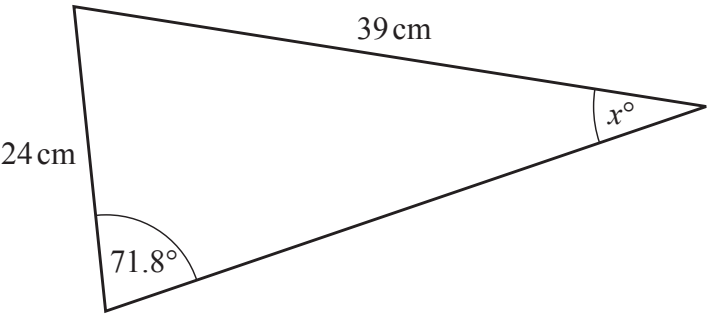
15. Question | 0580 May-June 2017 P2 V3 Q1

- 1 Calculate $\sqrt{\frac{1}{2}(1 - \cos 48^\circ)}$.

$\dots\dots\dots$ [1]

16. Question | 0580 May-June 2017 P2 V3 Q15

15

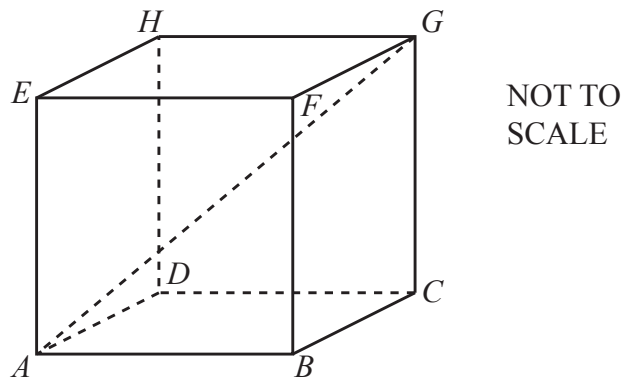


NOT TO
SCALE

Find the value of x .

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

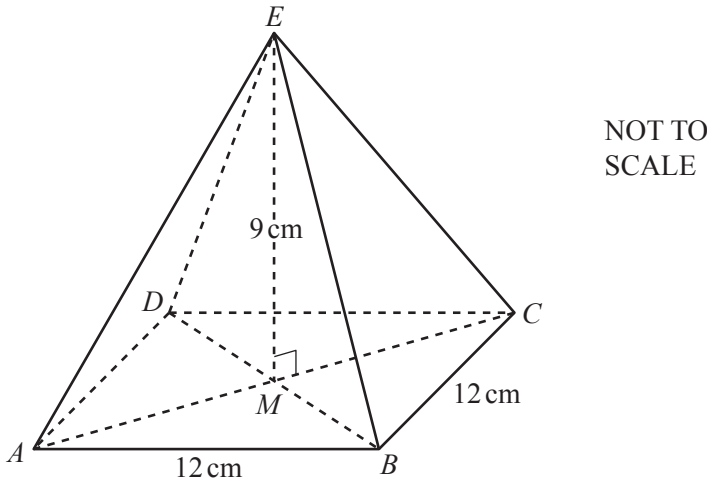
22 The diagram shows a cube $ABCDEFGH$ of side length 26 cm.



Calculate the angle between AG and the base of the cube.

..... [4]

21

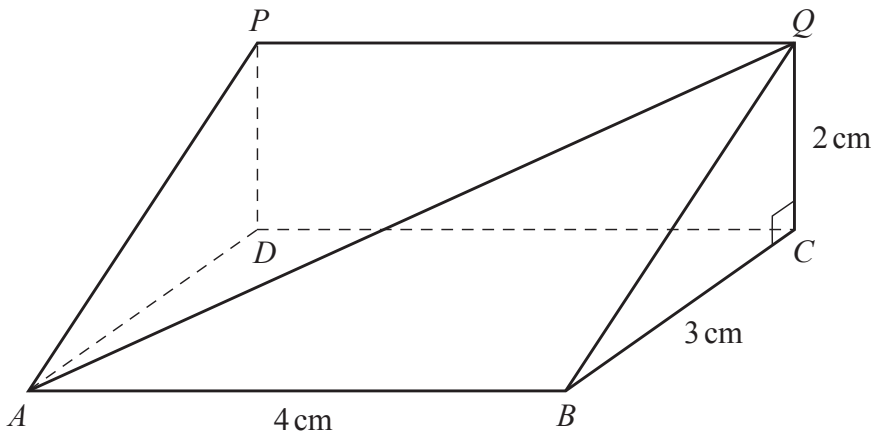


The diagram shows a square-based pyramid $ABCDE$.
The diagonals of the square meet at M .
 E is vertically above M .
 $AB = BC = 12\text{ cm}$ and $EM = 9\text{ cm}$.

Calculate the angle between the edge EC and the base, $ABCD$, of the pyramid.

..... [4]

26



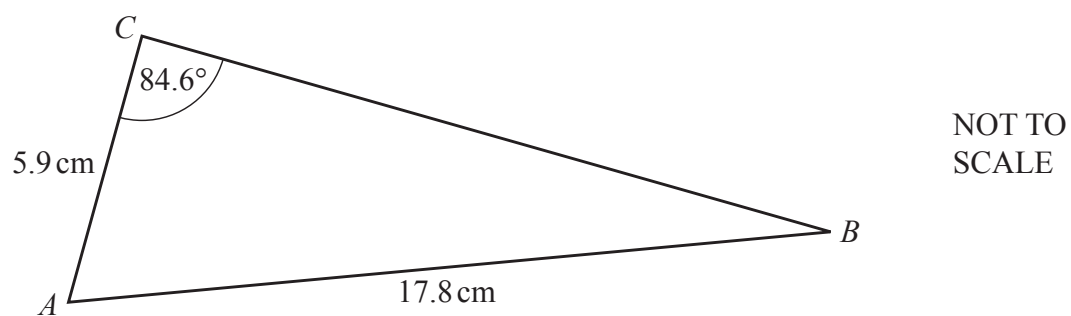
NOT TO
SCALE

The diagram shows a prism of length 4 cm.
The cross section is a right-angled triangle.
 $BC = 3\text{ cm}$ and $CQ = 2\text{ cm}$.

Calculate the angle between the line AQ and the base, $ABCD$, of the prism.

..... [4]

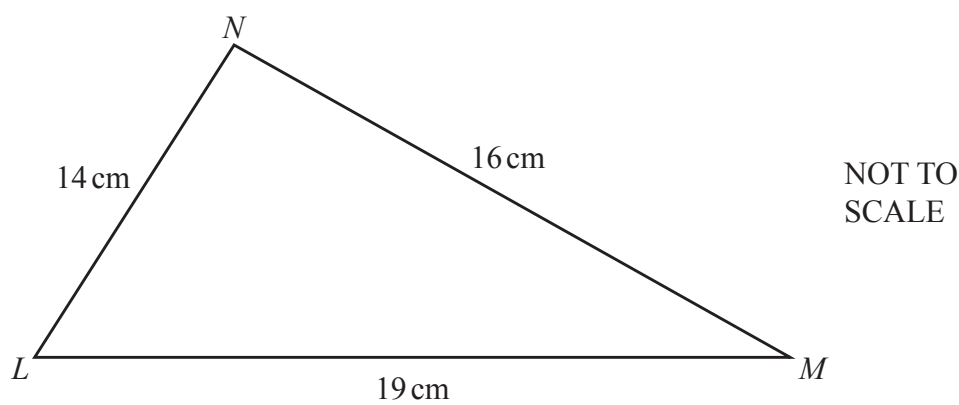
14



Use the sine rule to find angle ABC .

Angle $ABC = \dots\dots\dots [3]$

21. Question | 0580 May-June 2018 P2 V1 Q19

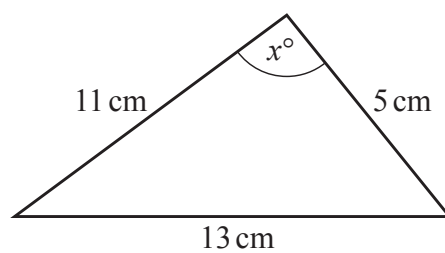
19

Calculate angle LMN .

Angle $LMN = \dots\dots\dots [4]$

22. Question | 0580 May-June 2018 P2 V3 Q23

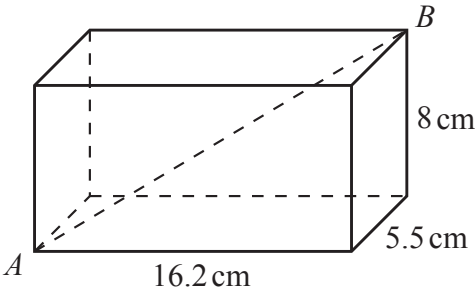
23

NOT TO
SCALECalculate the value of x . $x = \dots\dots\dots$ [4]

23. Question | 0580 Oct-Nov 2018 P2 V2 Q12

12 x° is an **obtuse** angle and $\sin x^\circ = 0.43$.Find the value of x . $x = \dots\dots\dots$ [2]

22



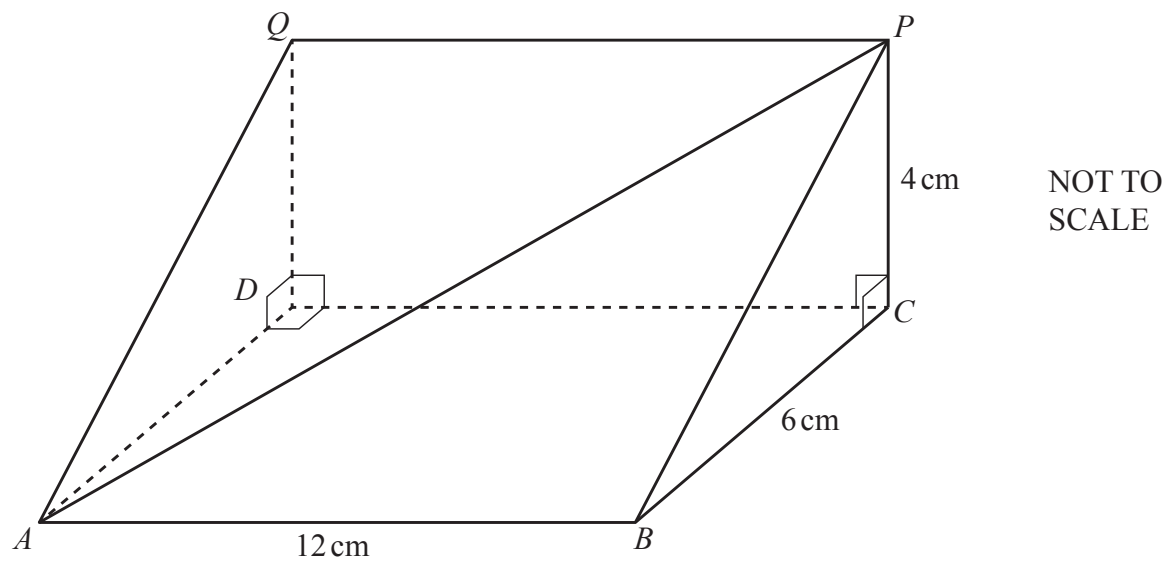
NOT TO
SCALE

The diagram shows a cuboid with dimensions 5.5 cm, 8 cm and 16.2 cm.

Calculate the angle between the line AB and the horizontal base of the cuboid.

..... [4]

23

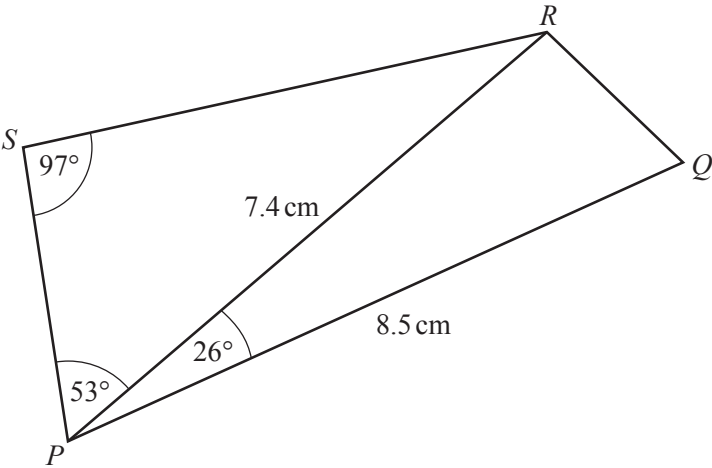


The diagram shows a triangular prism.
 $AB = 12\text{ cm}$, $BC = 6\text{ cm}$, $PC = 4\text{ cm}$, angle $BCP = 90^\circ$ and angle $QDC = 90^\circ$.

Calculate the angle between AP and the rectangular base $ABCD$.

..... [4]

24



NOT TO
SCALE

Calculate

(a) SR ,

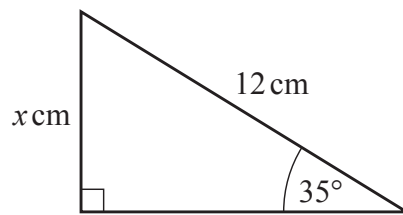
$SR =$ cm [3]

(b) RQ .

$RQ =$ cm [4]

27. Question | 0580 May-June 2019 P2 V1 Q7

7

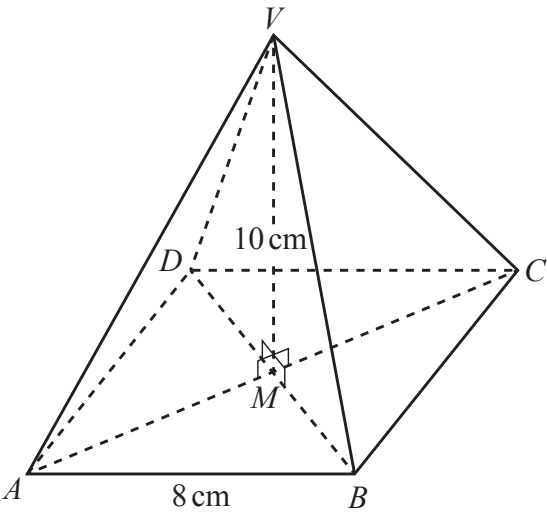
NOT TO
SCALE

The diagram shows a right-angled triangle.

Calculate the value of x .

$x =$ [2]

21



NOT TO
SCALE

The diagram shows a pyramid with a square base $ABCD$ of side length 8 cm.
The diagonals of the square, AC and BD , intersect at M .
 V is vertically above M and $VM = 10$ cm.

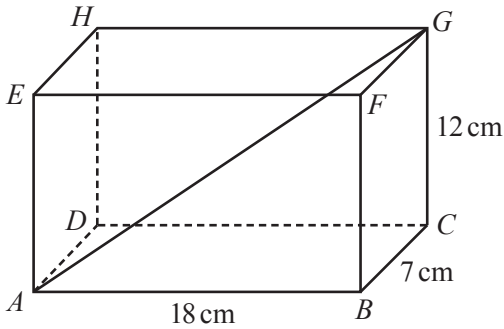
Calculate the angle between VA and the base.

..... [4]

2 Use your calculator to work out $\sqrt{1 - (\sin 33^\circ)^2}$.

..... [1]

24



NOT TO
SCALE

$ABCDEFGH$ is a cuboid.
 $AB = 18\text{ cm}$, $BC = 7\text{ cm}$ and $CG = 12\text{ cm}$.

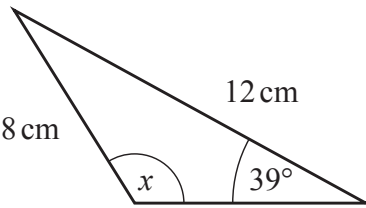
Calculate the angle that the diagonal AG makes with the base $ABCD$.

..... [4]

Question 25 is printed on the next page.

31. Question | 0580 Oct-Nov 2019 P2 V1 Q16

16



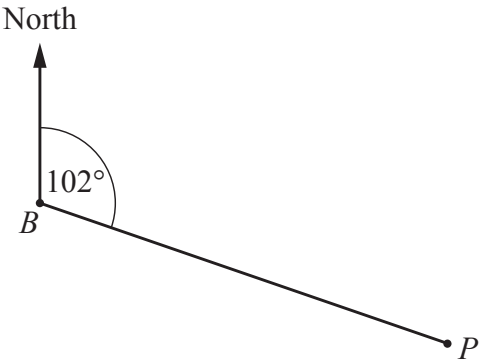
NOT TO
SCALE

Calculate the **obtuse** angle x in this triangle.

$x =$ [3]

32. Question | 0580 Oct-Nov 2019 P2 V2 Q8

8



NOT TO
SCALE

The bearing of P from B is 102° .

Find the bearing of B from P .

..... [2]

33. Question | 0580 Oct-Nov 2019 P2 V3 Q8

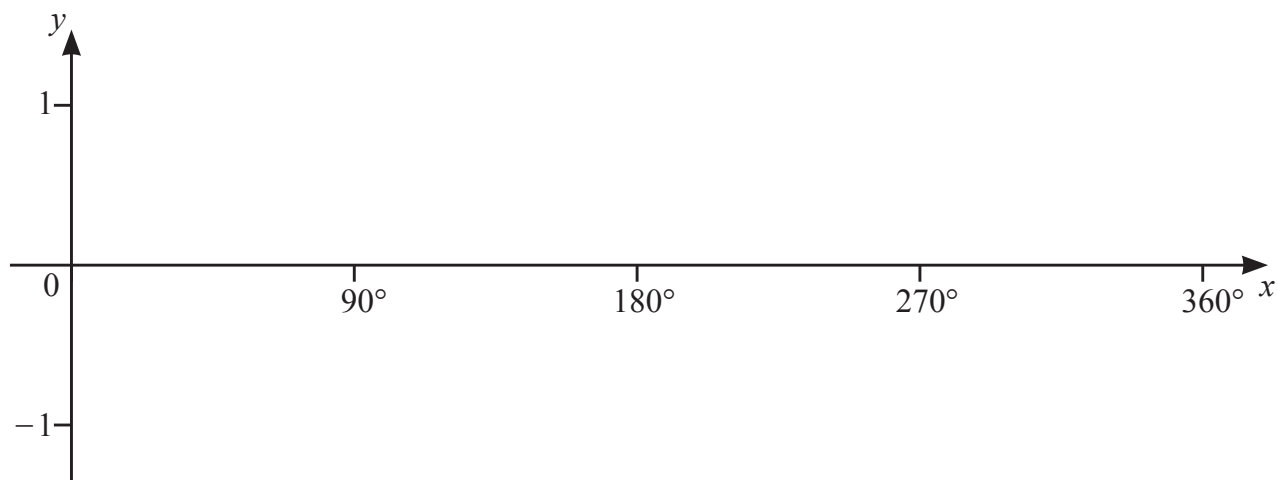
8 When $\sin x^\circ = 0.36$, find

(a) the acute angle x° ,

..... [1]

(b) the obtuse angle x° .

..... [1]

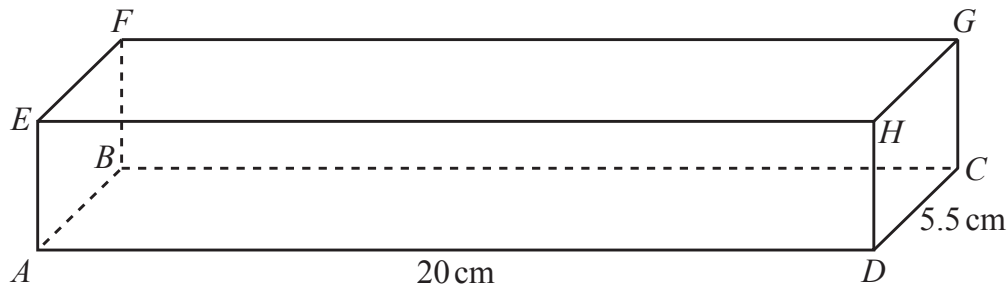
19

- (a) On the diagram, sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$. [2]
- (b) Solve the equation $4 \cos x + 2 = 3$ for $0^\circ \leq x \leq 360^\circ$.

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

Questions 20 and 21 are printed on the next page.

19



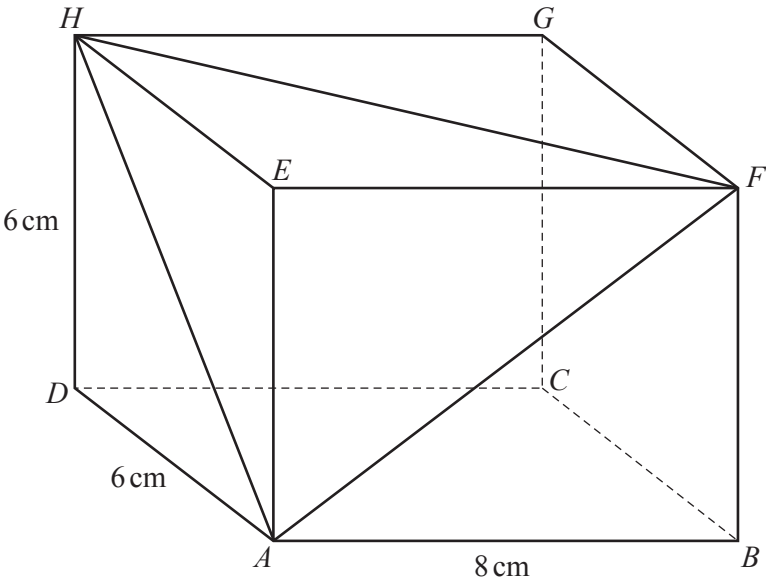
NOT TO
SCALE

The diagram shows cuboid $ABCDEFGH$ of length 20 cm and width 5.5 cm.
The volume of the cuboid is 495 cm^3 .

Find the angle between the line AG and the base of the cuboid $ABCD$.

..... [5]

27



The diagram shows a cuboid.
 $AB = 8\text{ cm}$, $AD = 6\text{ cm}$ and $DH = 6\text{ cm}$.

Calculate angle HAF .

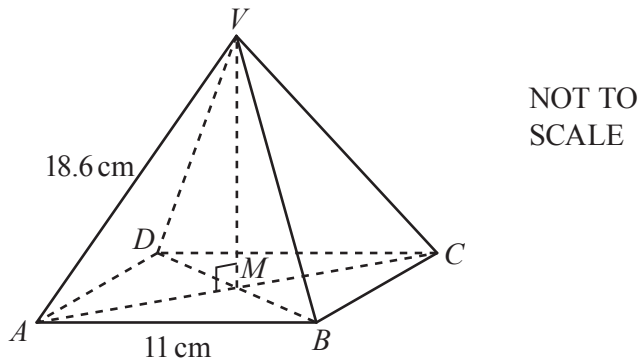
Angle $HAF = \dots\dots\dots$ [6]

8 The bearing of X from Y is 274° .

Calculate the bearing of Y from X .

..... [2]

20



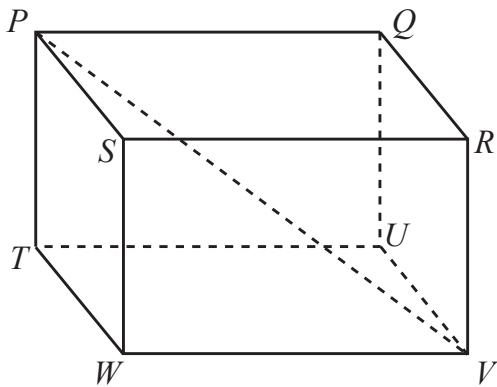
The diagram shows a pyramid with a square base $ABCD$.
The diagonals AC and BD intersect at M .
The vertex V is vertically above M .
 $AB = 11\text{ cm}$ and $AV = 18.6\text{ cm}$.

Calculate the angle that AV makes with the base.

..... [4]

Question 21 is printed on the next page.

21



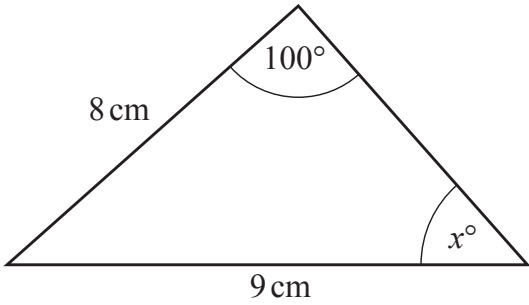
NOT TO
SCALE

The diagram shows a cuboid $PQRSTU VW$.
 $PV = 17.2\text{ cm}$
The angle between the line PV and the base $TUVW$ of the cuboid is 43° .
Calculate PT .

$PT = \dots\dots\dots\text{ cm [3]}$

40. Question | 0580 Oct-Nov 2020 P2 V2 Q19

19



NOT TO
SCALE

(a) Calculate the value of x .

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

(b) Calculate the area of the triangle.

$\dots\dots\dots \text{cm}^2$ [3]

41. Question | 0580 Oct-Nov 2020 P2 V2 Q25

25 Solve the equation $\tan x = 2$ for $0^\circ \leq x \leq 360^\circ$.

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

42. Question | 0580 Oct-Nov 2020 P2 V3 Q25

25 Solve $3 \tan x = -4$ for $0^\circ \leq x \leq 360^\circ$.

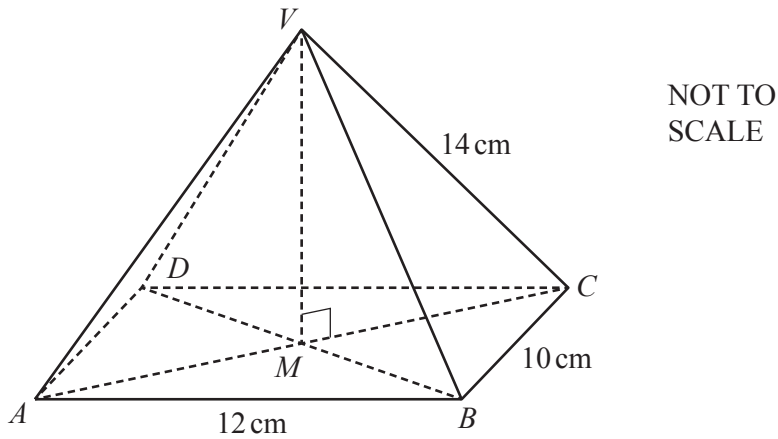
$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [3]

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23



The diagram shows a pyramid $VABCD$ with a rectangular base.
 V is vertically above M , the intersection of the diagonals AC and BD .
 $AB = 12\text{ cm}$, $BC = 10\text{ cm}$ and $VC = 14\text{ cm}$.

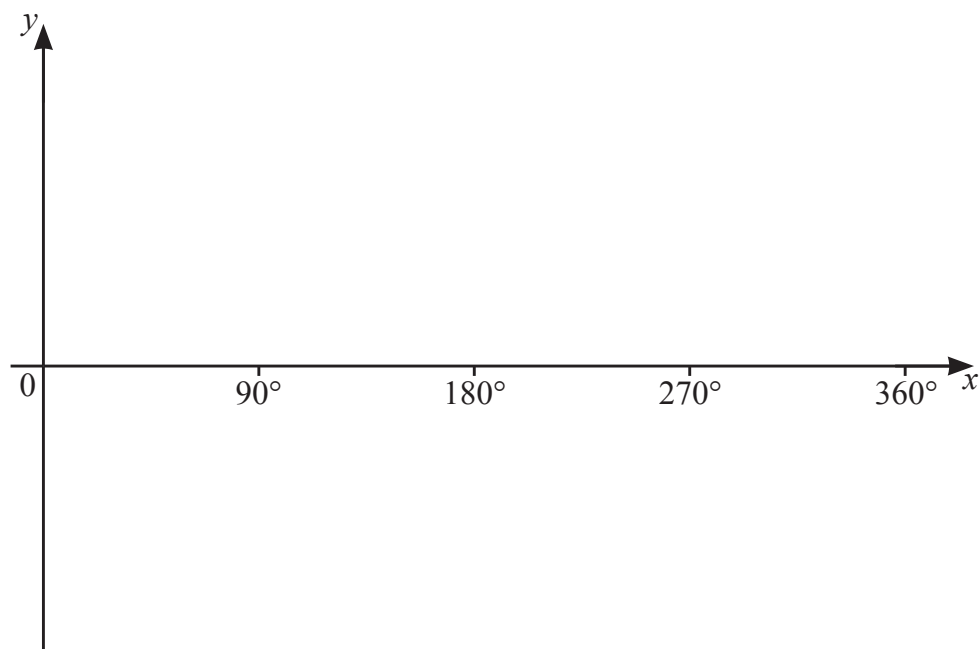
Calculate the angle that VC makes with the base $ABCD$.

..... [4]

Question 24 is printed on the next page.

44. Question | 0580 May-June 2021 P2 V1 Q19

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



[2]

(b) Solve the equation $5 \tan x = 1$ for $0^\circ \leq x \leq 360^\circ$.

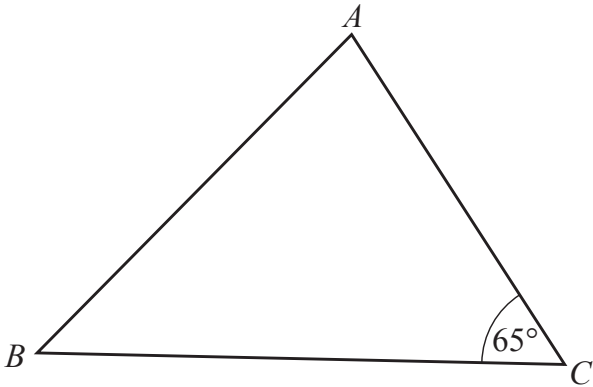
$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [2]

23 Find all the solutions of $4 \sin x = 3$ for $0^\circ \leq x \leq 360^\circ$.

..... [2]

46. Question | 0580 May-June 2021 P2 V3 Q21

21



NOT TO
SCALE

The shortest distance from B to AC is 12.8 cm.

Calculate BC .

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

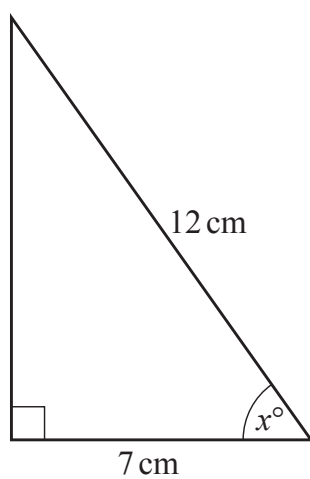
47. Question | 0580 May-June 2021 P2 V3 Q23

23 A triangle has sides of length 11 cm, 10 cm and 9 cm.

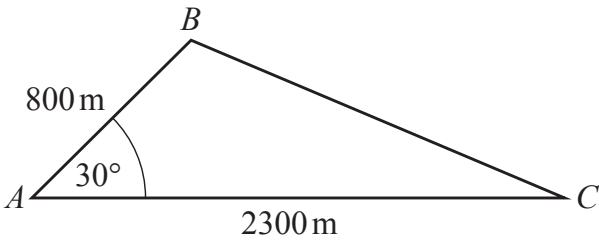
Calculate the largest angle in the triangle.

$\dots\dots\dots$ [4]

48. Question | 0580 Oct-Nov 2021 P2 V1 Q9

9NOT TO
SCALECalculate the value of x . $x = \dots\dots\dots$ [2]

18



NOT TO
SCALE

The diagram shows some land in the shape of a triangle ABC .
Houses are built on this land.
Each house requires 400 m^2 of land.

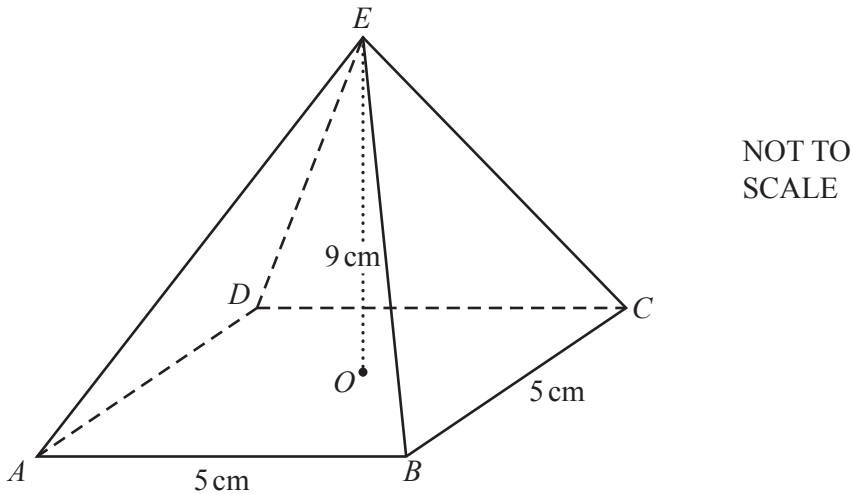
Find the greatest number of houses that can be built on this land.

..... [3]

20 Solve $3(2 + \cos x) = 5$ for $0^\circ \leq x \leq 360^\circ$.

..... [3]

21



The diagram shows a pyramid $ABCDE$.
The pyramid has a square horizontal base $ABCD$ with side 5 cm .
The vertex E is vertically above the centre O of the base.
The height OE of the pyramid is 9 cm .

Calculate the angle that EC makes with the base $ABCD$.

..... [4]

Question 22 is printed on the next page.

22 Solve the equation $7 \sin x + 2 = 0$ for $0^\circ \leq x \leq 360^\circ$.

..... [3]

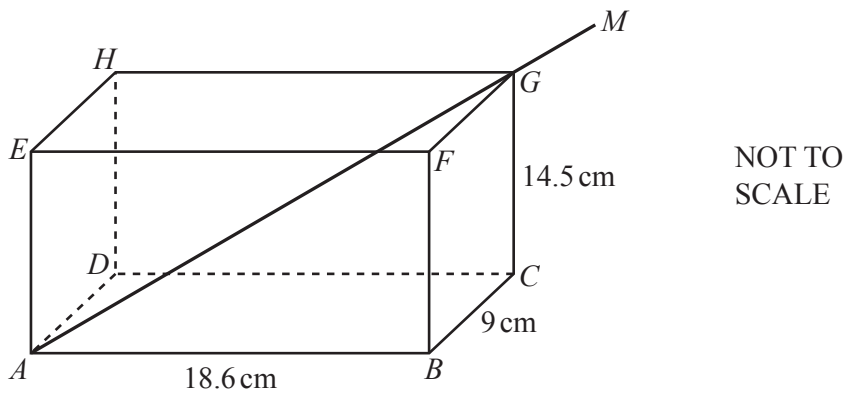
Question 23 is printed on the next page.

24 $\tan x = \sqrt{3}$ and $0^\circ \leq x \leq 360^\circ$.

Find all the possible values of x .

..... [2]

21



The diagram shows an open rectangular box $ABCDEFGH$.
 $AB = 18.6\text{ cm}$, $BC = 9\text{ cm}$ and $CG = 14.5\text{ cm}$.
A straight stick AGM rests against A and G and extends outside the box to M .

(a) Calculate the angle between the stick and the base of the box.

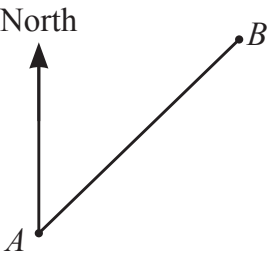
..... [4]

(b) $AM = 30\text{ cm}$.

Show that $GM = 4.8\text{ cm}$, correct to 1 decimal place.

[3]

9



NOT TO
SCALE

The bearing of B from A is 059° .

Work out the bearing of A from B .

..... [2]

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



[2]

- (b)** Solve the equation $3 \sin x + 1 = 0$ for $0^\circ \leq x \leq 360^\circ$.

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

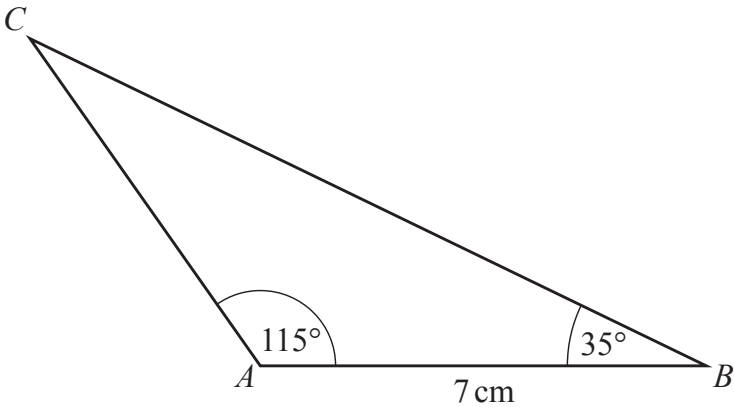
57. Question | 0580 May-June 2022 P2 V3 Q23

23 Solve the equation $3 \sin x + 3 = 1$ for $0^\circ \leq x \leq 360^\circ$.

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

58. Question | 0580 Oct-Nov 2022 P2 V1 Q18

18



NOT TO
SCALE

Calculate the length BC .

$BC = \dots\dots\dots$ cm [4]

22



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

(b) Solve the equation $\cos x = -\frac{1}{2}$ for $0^\circ \leq x \leq 360^\circ$.

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

10 Calculate.

(a) 2000×1.2^3

..... [1]

(b) $2\frac{1}{8} \times \frac{6}{17}$

..... [1]

(c) $\frac{4.5(\cos 30^\circ)}{\sqrt{3}} - 2$

..... [1]

61. Question | 0580 Oct-Nov 2022 P2 V3 Q20

20 (a)

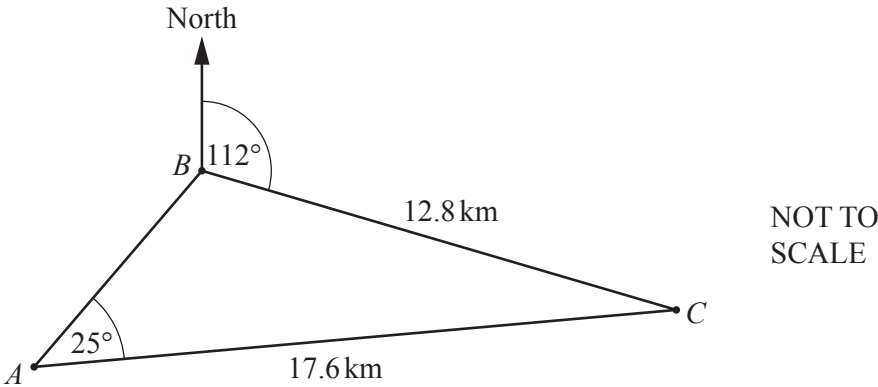


Sketch the graph of $y = \sin x$ for $0^\circ \leq x \leq 360^\circ$. [2]

(b) Solve $3 - 2 \sin x = \frac{13}{4}$ for $0^\circ \leq x \leq 360^\circ$.

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

21

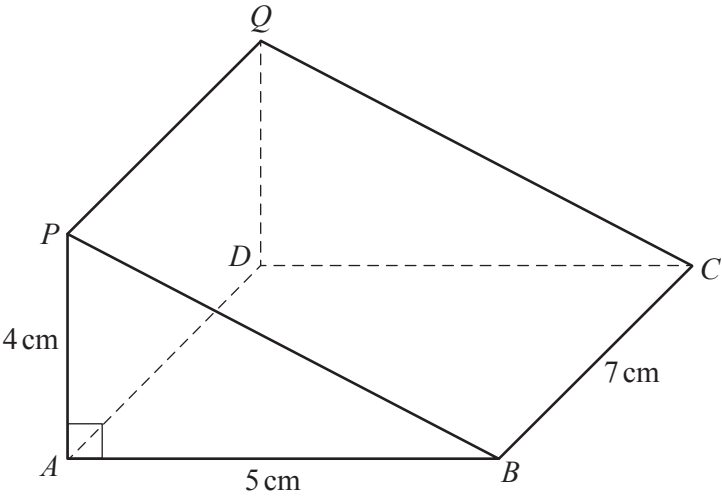


The diagram shows the positions of three ships A , B and C .
 $AC = 17.6$ km, $BC = 12.8$ km and angle $BAC = 25^\circ$.
The bearing of C from B is 112° and angle ABC is obtuse.

Calculate the bearing of B from A .

..... [5]

22



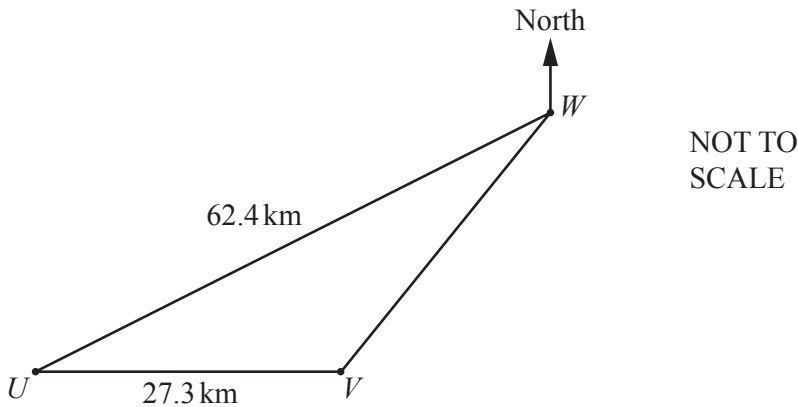
NOT TO
SCALE

The diagram shows a triangular prism $ABCDQP$ of length 7 cm.
The cross-section is triangle PAB with $PA = 4$ cm, $AB = 5$ cm and angle $PAB = 90^\circ$.

Calculate the angle between the line PC and the base $ABCD$.

..... [4]

18



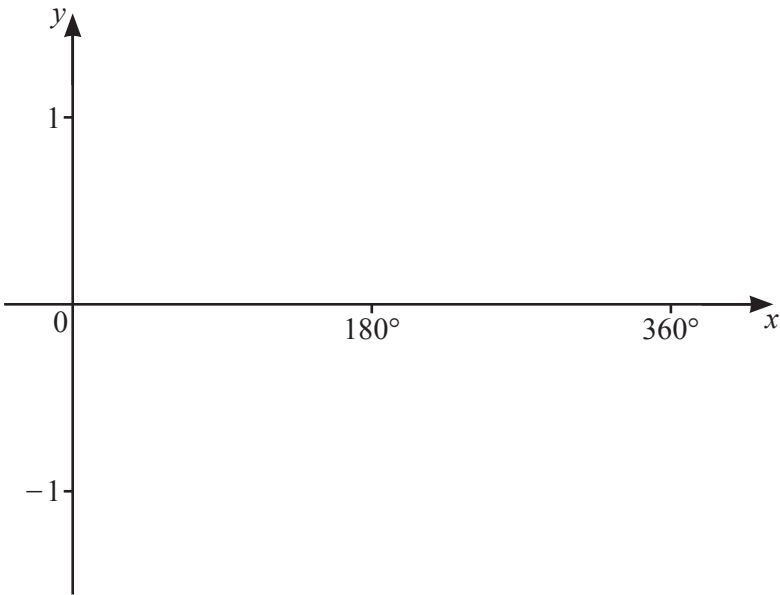
The diagram shows the position of three towns, U , V and W .
 U is due west of V and angle $UVW = 125^\circ$.

Calculate the bearing of U from W .

..... [4]

65. Question | 0580 May-June 2023 P2 V1 Q19

19 (a) On the diagram, sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$.

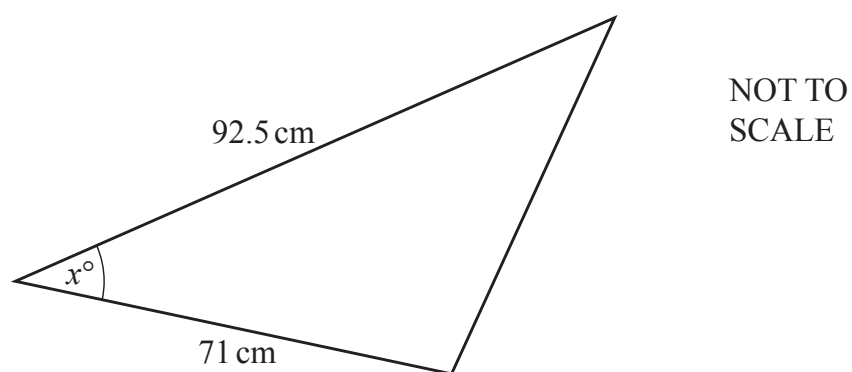


[2]

(b) Solve the equation $5 \cos x + 3 = 0$ for $0^\circ \leq x \leq 360^\circ$.

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

17



The diagram shows a triangle with an acute angle marked x° .
The area of the triangle is 2143 cm^2 .

Work out the value of x .

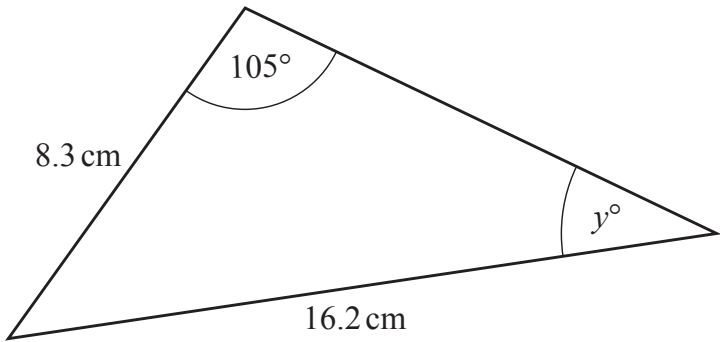
$x = \dots\dots\dots$ [2]

21 Solve the equation $5 \sin x = -3$ for $0^\circ \leq x \leq 360^\circ$.

..... [3]

Questions 22 and 23 are printed on the next page.

18



NOT TO
SCALE

Calculate the value of y .

$y =$ [3]

19 (a)



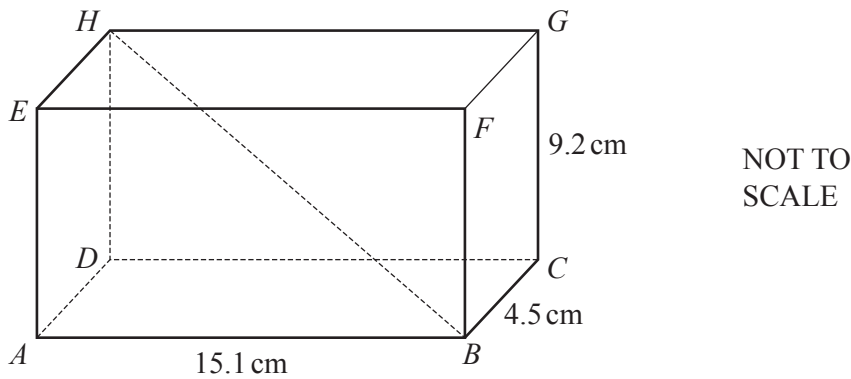
Sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$.

[2]

(b) When $\cos x = 0.21$, find the **reflex** angle x .

..... [2]

21

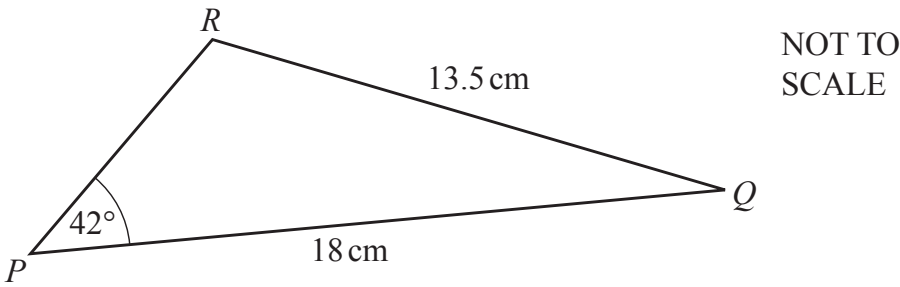


The diagram shows a cuboid $ABCDEFGH$.
 $AB = 15.1\text{ cm}$, $BC = 4.5\text{ cm}$ and $CG = 9.2\text{ cm}$.

Calculate the angle that the diagonal BH makes with the face $ADHE$.

..... [4]

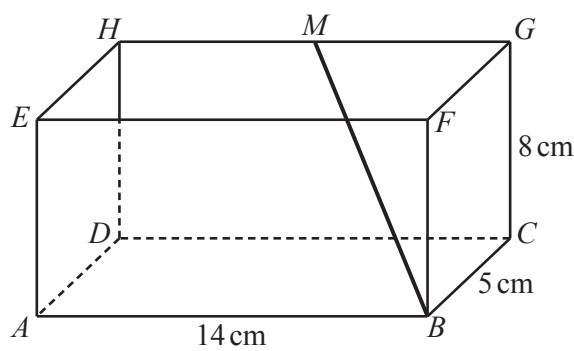
19



Calculate the obtuse angle PRQ .

Angle $PRQ = \dots\dots\dots$ [4]

21



NOT TO
SCALE

The diagram shows a cuboid $ABCDEFGH$.
 $AB = 14\text{ cm}$, $BC = 5\text{ cm}$ and $CG = 8\text{ cm}$.
 M is the midpoint of HG .

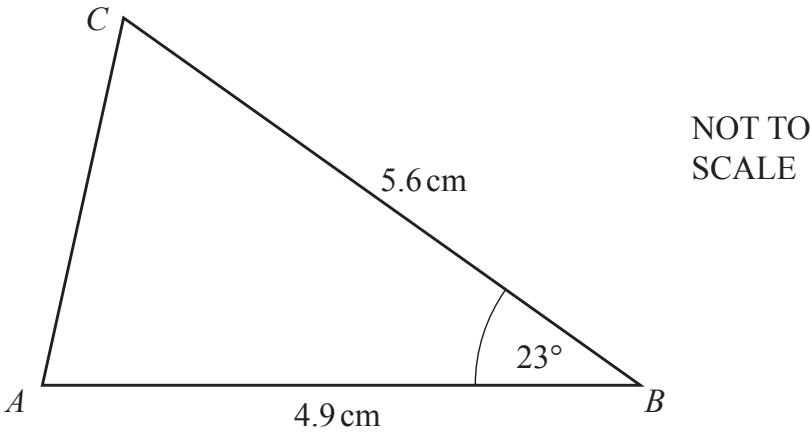
(a) Calculate BM .

..... cm [3]

(b) Calculate the angle that BM makes with the base $ABCD$.

..... [3]

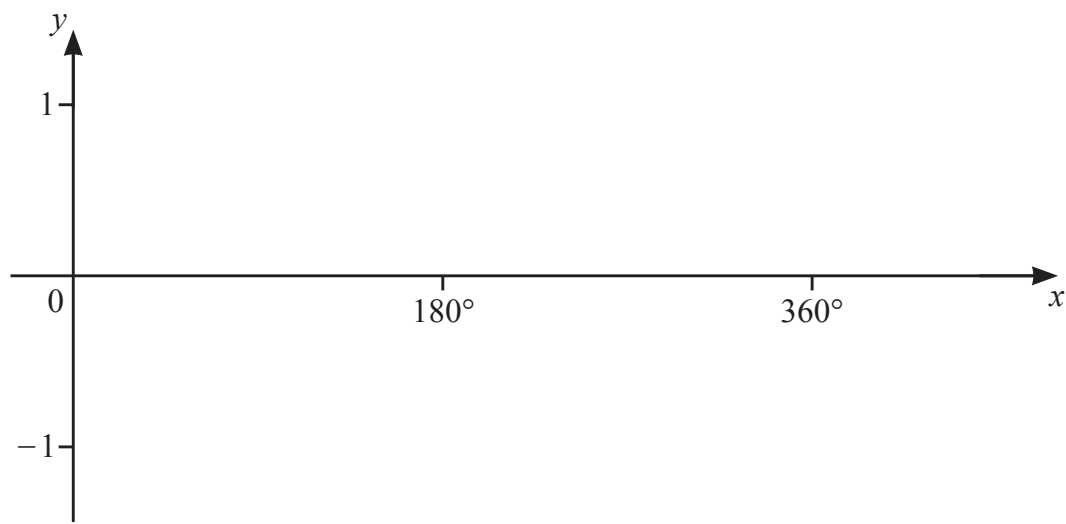
20



Calculate the area of triangle ABC .

..... cm^2 [2]

23 (a) On the axes, sketch the graph of $y = \cos x$, for $0^\circ \leq x \leq 360^\circ$.

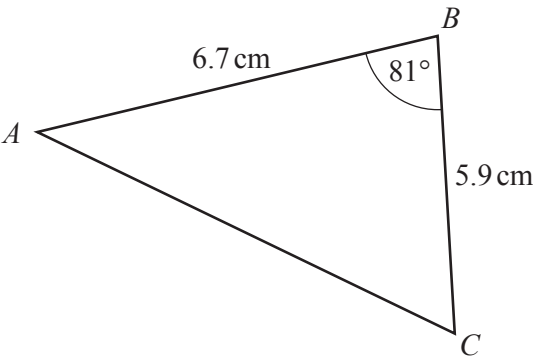


[2]

(b) Solve the equation $\cos x = 0.294$ for $0^\circ \leq x \leq 360^\circ$.

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

17



NOT TO
SCALE

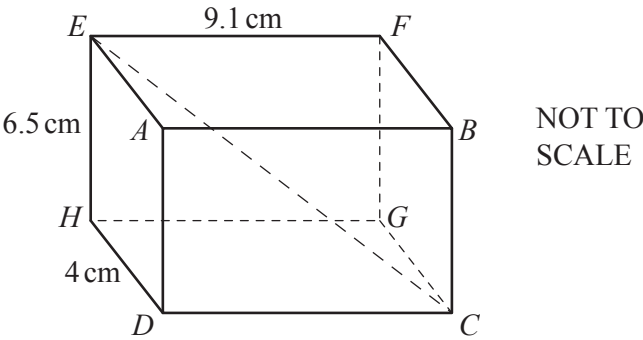
Calculate the area of triangle ABC .

.....cm² [2]

20 Solve the equation $8 \sin x + 6 = 1$ for $0^\circ \leq x \leq 360^\circ$.

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

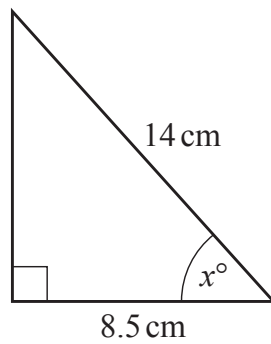
21



The diagram shows a cuboid.
 $HD = 4\text{ cm}$, $EH = 6.5\text{ cm}$ and $EF = 9.1\text{ cm}$.

Calculate the angle between CE and the base $CDHG$.

..... [4]

12NOT TO
SCALE

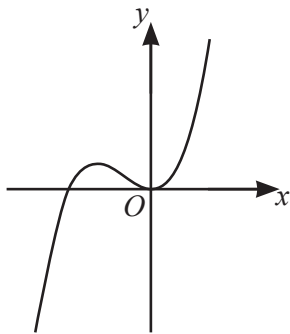
The diagram shows a right-angled triangle.

Calculate the value of x .

$x =$ [2]

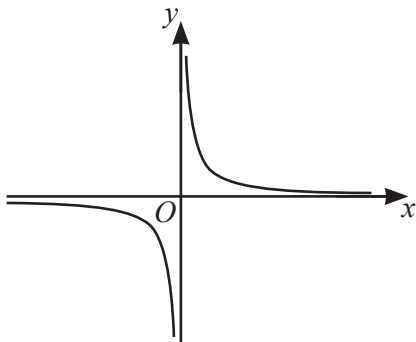
22 (a) For each sketch, put a ring around the correct type of function shown.

(i)



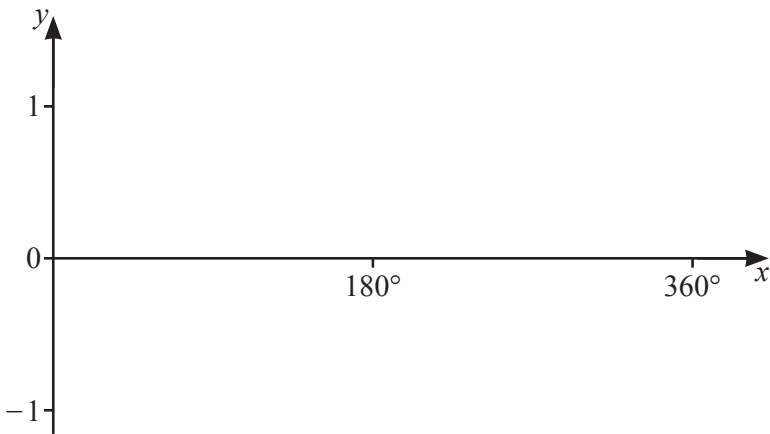
linear cubic quadratic reciprocal exponential [1]

(ii)



linear cubic quadratic reciprocal exponential [1]

(b) (i) On the grid, sketch the curve $y = \sin x$ for $0^\circ \leq x \leq 360^\circ$.



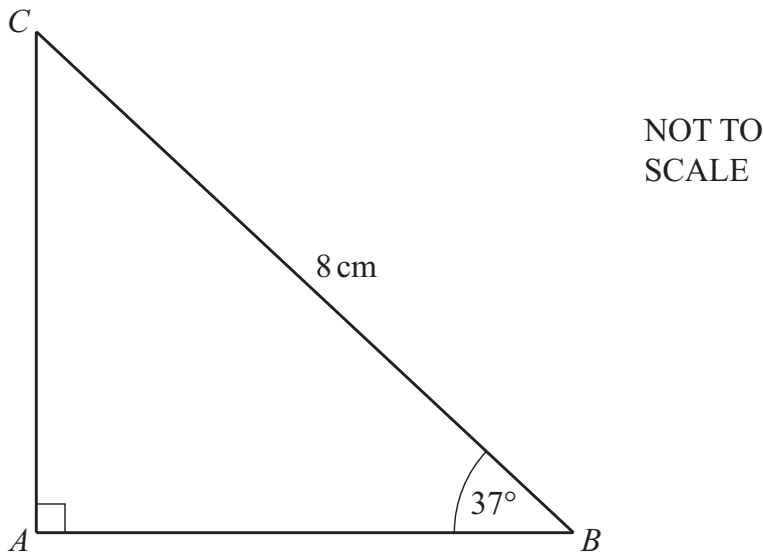
[2]

(ii) Solve the equation $\sin x + 0.4 = 0$ for $0^\circ \leq x \leq 360^\circ$.

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

80. Question part 1/2 | 0580 May-June 2024 P2 V3 Q9

9



The diagram shows a right-angled triangle.

Calculate AB .

80. Question part 2/2 | 0580 May-June 2024 P2 V3 Q9

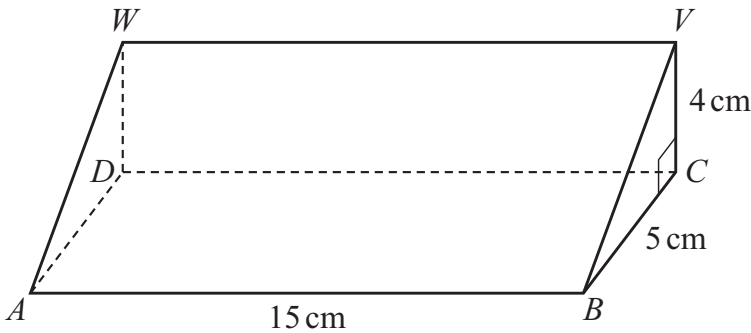


4

81. Question | 0580 May-June 2024 P2 V3 Q22

22 Solve the equation $\tan x + \sqrt{3} = 0$ for $0^\circ \leq x \leq 360^\circ$.

24

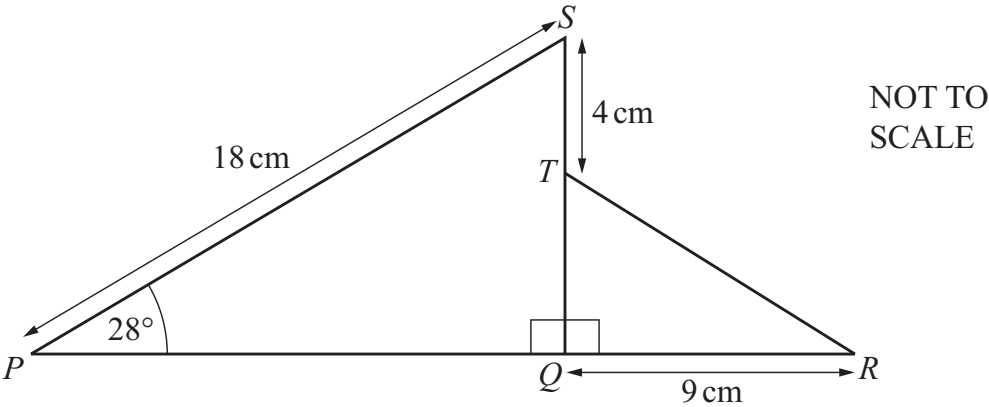


NOT TO
SCALE

The diagram shows a triangular prism with cross-section triangle BCV .
Angle $BCV = 90^\circ$, $BC = 5\text{ cm}$, $CV = 4\text{ cm}$ and $AB = 15\text{ cm}$.

Calculate the angle between AV and the base $ABCD$.

20



The diagram shows two right-angled triangles PQS and RQT .
 PQR and QTS are straight lines.

Calculate angle QTR .

Angle $QTR = \dots\dots\dots$ [5]

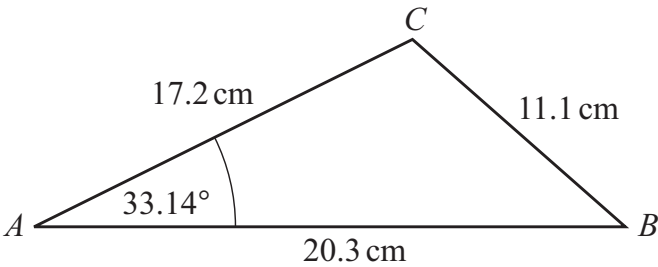
84. Question | 0580 Oct-Nov 2024 P2 V1 Q21

21 Solve the equation $3 \tan x + 5 = 1$ for $0^\circ \leq x \leq 360^\circ$.

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

85. Question | 0580 Oct-Nov 2024 P2 V3 Q16

16



NOT TO
SCALE

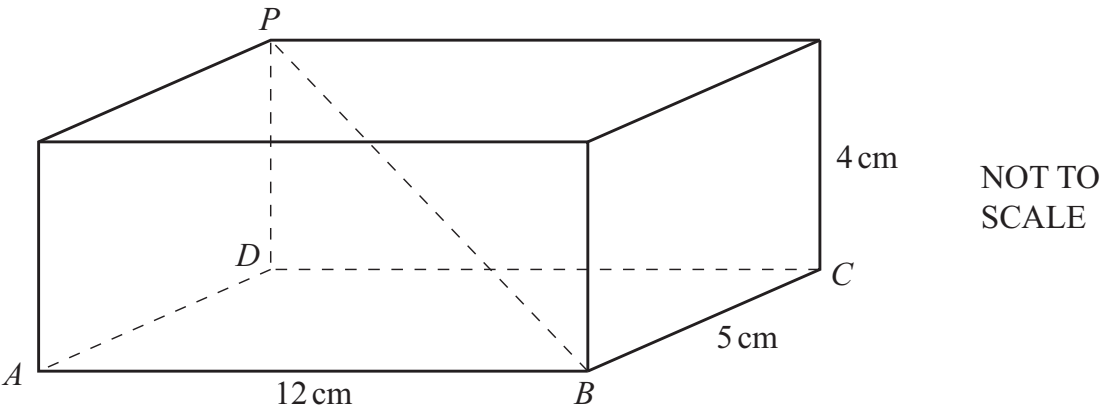
Calculate the shortest distance from C to AB .

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

20 Solve the equation $\tan x + 2 = 0$ for $0^\circ \leq x \leq 360^\circ$.

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

22

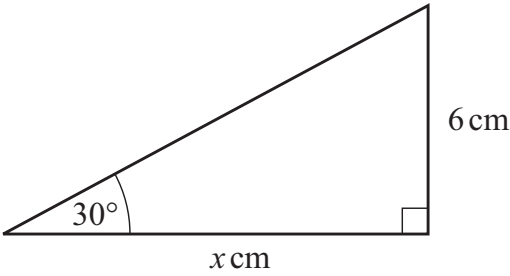


The diagram shows a cuboid with a diagonal PB .

Calculate the angle between the diagonal PB and the base $ABCD$.

..... [4]

20



NOT TO
SCALE

Find the exact value of x .

$x = \dots\dots\dots$ [4]

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

..... [1]

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

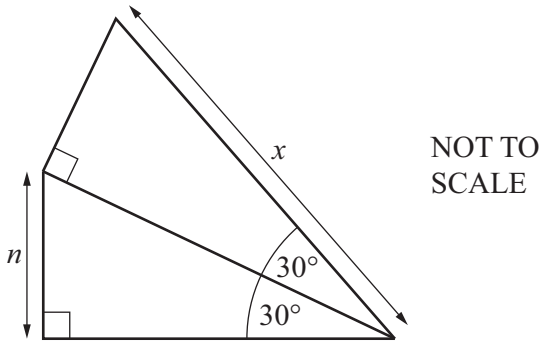
$x =$ or $x =$ [3]

90. Question | 0580 May-June 2025 P2 V3 Q23

23 (a) Write down the value of $\cos 90^\circ$.

..... [1]

(b)



The diagram shows two different right-angled triangles joined by a common side.

Find x in terms of n .

$x =$ [5]

Question 24 is on the next page.

91. Question | 0580 Oct-Nov 2025 P2 V1 Q26

26 Solve $\tan x = -\frac{1}{\sqrt{3}}$ for $0^\circ \leq x \leq 360^\circ$.

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

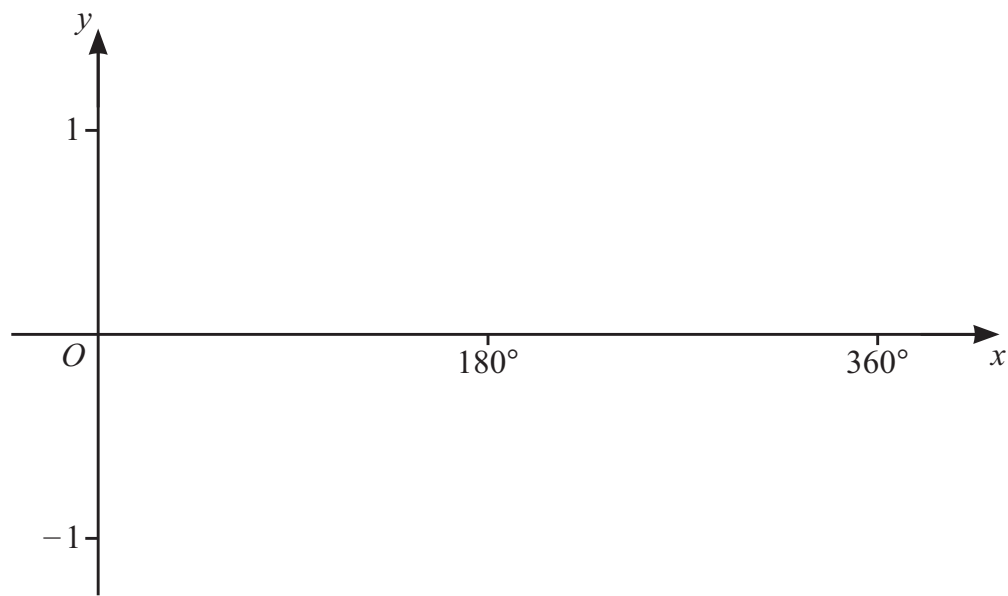
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92. Question | 0580 Oct-Nov 2025 P2 V2 Q21

21 (a)

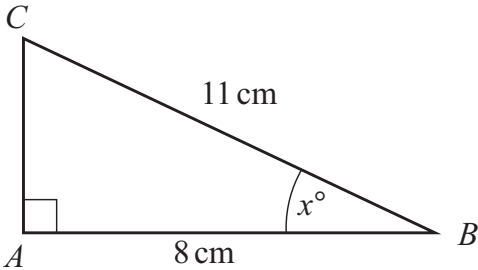


On the diagram, sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$. [2]

(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]

10



NOT TO
SCALE

The diagram shows a right-angled triangle ABC .

(a) Work out the exact length of AC .

..... cm [3]

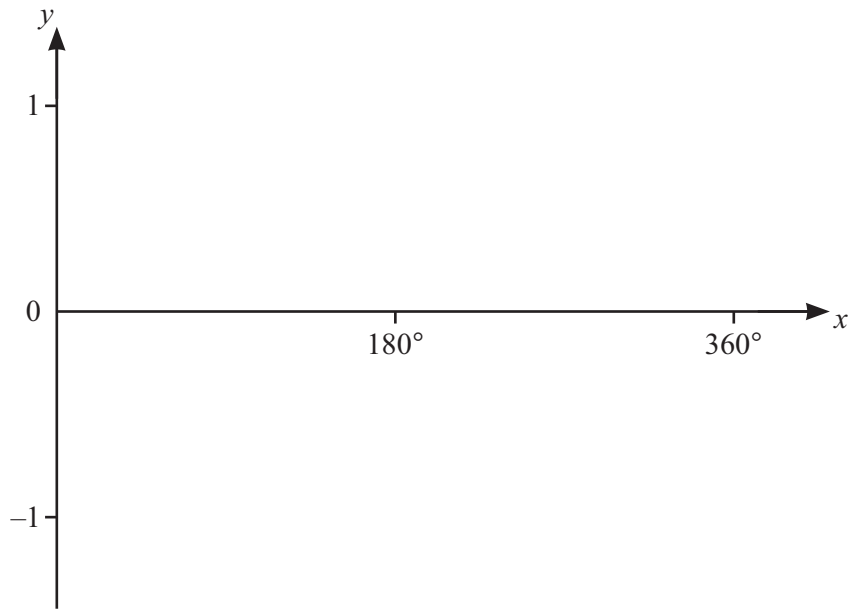
(b) $\cos x = k$

Write down the value of k .

$k =$ [1]

94. Question | 0580 Oct-Nov 2025 P2 V3 Q17

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



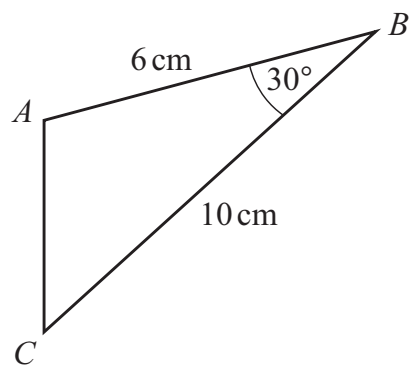
[2]

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

Find the value of x .

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

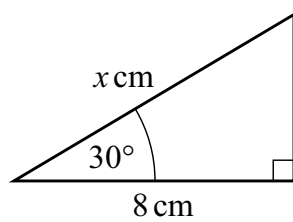
23



NOT TO
SCALE

Work out the area of triangle ABC .

..... cm^2 [3]

22NOT TO
SCALEFind the exact value of x . $x = \dots\dots\dots [4]$