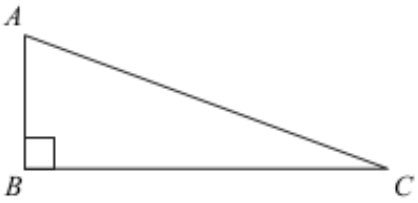
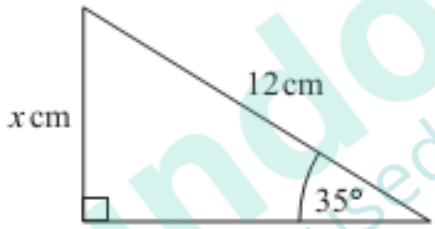
1. In the right-angled triangle ABC, cosC= 4/5 . Find angle A. [2]



0580/22/M/J/11 Q1)

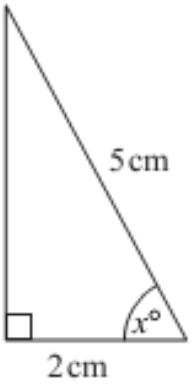
2. The diagram shows a right-angled triangle.



Calculate the value of x. [2]

0580/21/M/J/19 Q7)

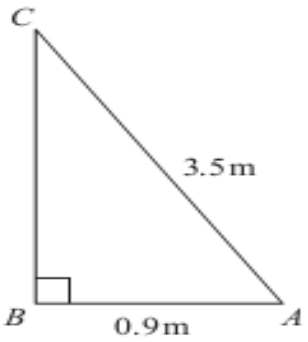
3. Calculate the value of x [2]



0580/23/M/J/15 Q3)

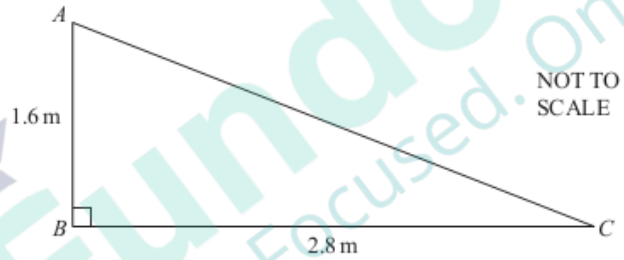
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4. Calculate angle BAC.[2]



0580/22/F/M/16 Q3)

5. (a) Find the area of triangle ABC. [2]

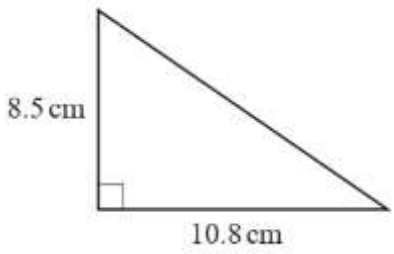


(b) Calculate AC. [2]

0580/22/F/M/18 Q16)

6. The diagram shows a right-angled triangle.

(a) Calculate the area. [2]

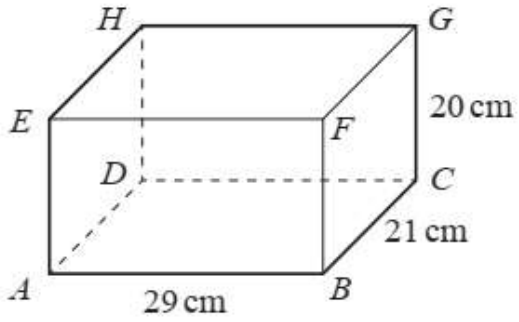


(b) Calculate the perimeter. [2]

0580/22/F/M/20 Q7

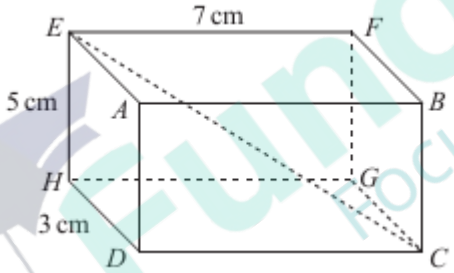
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7. The diagram shows a cuboid
Calculate the length *AG*. [3]



0580/42/O/N/22 Q7(b)(i)

8. The diagram shows a cuboid.



HD= 3 cm, EH= 5 cm and EF= 7 cm.
Calculate the length CE, [4]
0580/23/M/J/16 Q23) (a)

9. A cuboid measures 24cm by 12cm by 8cm.
Calculate the length of a diagonal of the cuboid. [3]
0580/21/M/J/22 Q24)

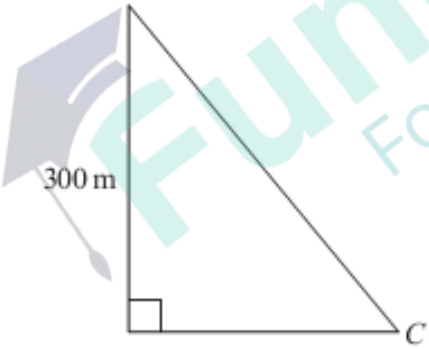
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10. Calculate the value of a [4]



0580/43/M/J/14 Q3(b)

11. From the top of a building, 300 metres high,

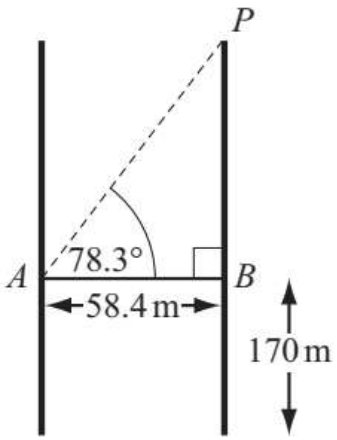


the angle of depression of a car C, is 52° ($\hat{C}$)
Calculate the horizontal distance from the car to the base of the building. [3]

0580/22/O/N/16 Q9)

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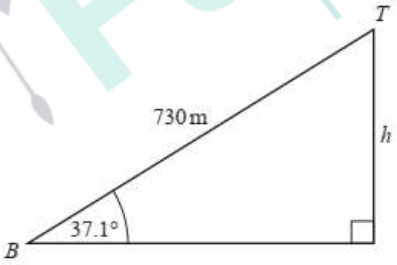
12. The line AB represents the glass walkway between the Petronas Towers in Kuala Lumpur.



NOT TO SCALE

The walkway is 58.4 metres long and is 170 metres above the ground.
The angle of elevation of the point P from A is 78.3°.
Calculate the height of P above the ground. [3]
0580/22/M/J/12 Q9)

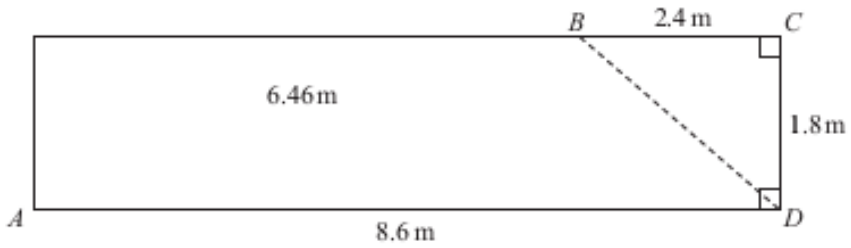
13. The diagram represents the ski lift in Queenstown New Zealand.



(a)The length of the cable from the bottom, B, to the top, T, is 730 metres.
The angle of elevation of T from B is 37.1°.
Calculate the change in altitude, h metres, from the bottom to the top. [2]
(b)The lift travels along the cable at 3.65 metres per second.
Calculate how long it takes to travel from B to T.
Give your answer in minutes and seconds.[2]
0580/22/M/J/10 Q12)

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14. The diagram shows the cross section, ABCD, of a ramp.

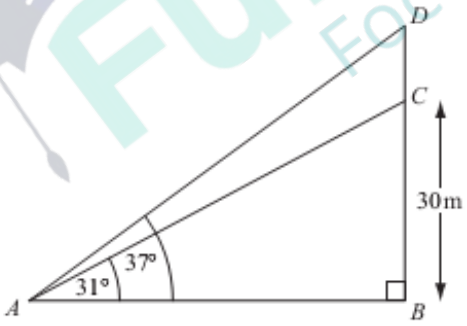


(a)Calculate angle DBC. [2]

(b) (i)Show that BD is exactly 3 m. [2]

0580/42/O/N/13 2 (a)

15. In the diagram, BC represents a building 30 m tall.
A flagpole, DC, stands on top of the building. From a point, A, the angle of elevation of the top of the building is 31°.
The angle of elevation of the top of the flagpole is 37°.

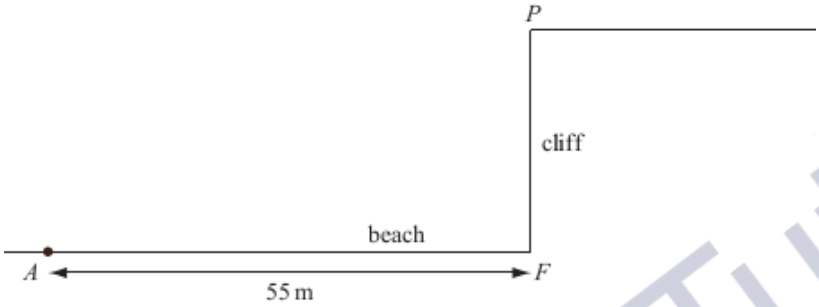


Calculate the height, DC, of the flagpole. [5]

0580/41/O/N/14 Q7(b)

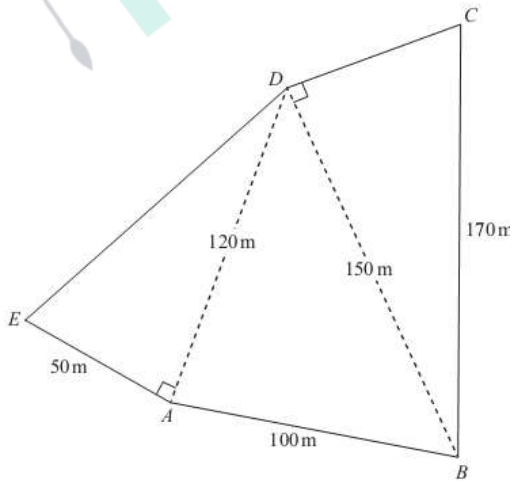
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16. The diagram shows a point P at the top of a cliff.
The point F is on the beach and vertically below P.
The point A is 55m from F, along the horizontal beach.



The angle of elevation of P from A (P$\hat{A}$F) is 17°.
Calculate PF, the height of the cliff.[3]
0580/23/M/J/10 Q11)

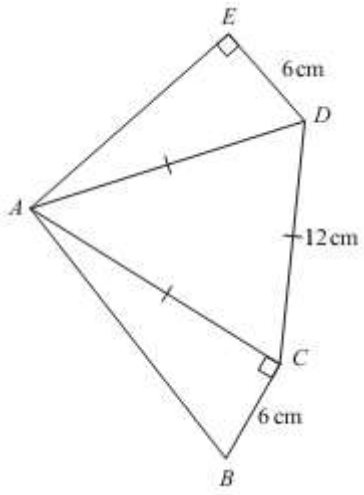
17. The diagram shows a field ABCDE.



(a) Calculate the perimeter of the field ABCDE. [4]
(b) Calculate angle CBD. [2]
0580/41/M/J/19 Q3)

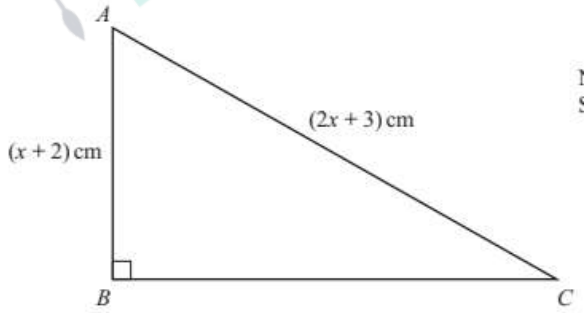
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18. In the pentagon ABCDE, angle ACB =angle AED =90°.
Triangle ACD is equilateral with side length 12 cm. DE = BC =6 cm.



(i) Calculate angle BAE. [4]
(ii) Calculate AB. [2]
(iii) Calculate AE. [3]
(iv) ~~Calculate the area of the pentagon~~.[4]
0580/43/M/J/18 Q6 (a)

19. In triangle ABC, AB= (x+ 2) cm and
AC= (2x+ 3) cm. sin ACB= 9/16



Find the length of BC. [6]
0580/41/M/J/13 Q7(a)

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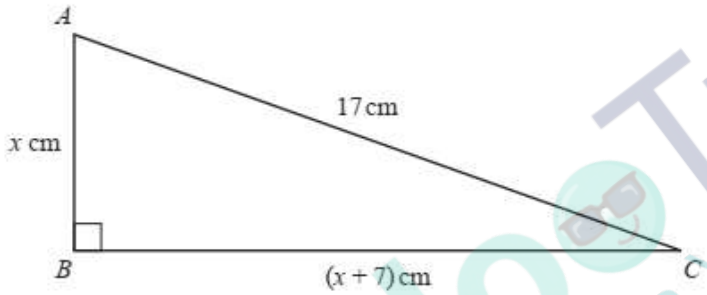
20. In the right-angled triangle ABC, AB= $x$cm, BC= (x+ 7) cm and AC= 17 cm.

(i) Show that $x^2 + 7x - 120 = 0$. [3]

(ii) Factorise $x^2 + 7x - 120$ [2]

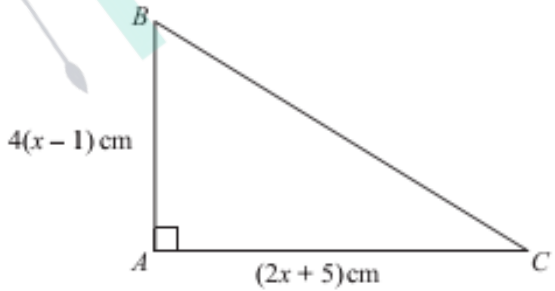
(iii) Write down the solutions of $x^2 + 7x - 120 = 0$. [1]

(iv) Write down the length of BC. [1]



0580/42/O/N/10 Q5)

21. The diagram shows a right-angled triangle ABC.



The area of this triangle is 30 cm^2.

(a) Show that $2x^2 + 3x - 20 = 0$. [3]

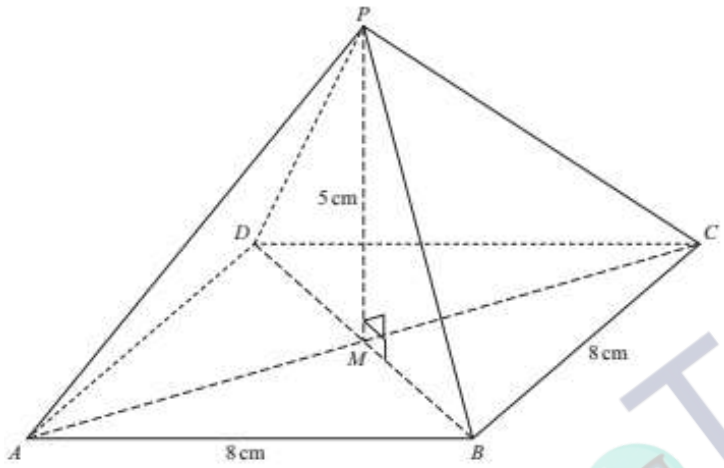
(b) Use factorisation to solve the equation $2x^2 + 3x - 20 = 0$. [3]

(c) Calculate BC. [3]

0580/42/O/N/18 Q4)

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22. The diagram shows a pyramid on a square base ABCD.



The diagonals of the base, AC and BD, intersect at M.
The sides of the square are 8cm and the vertical height of the pyramid, PM, is 5cm.
Calculate
(a) the length of the edge PB, [3]
(b) ~~the angle between PB and the base ABCD. [3]~~

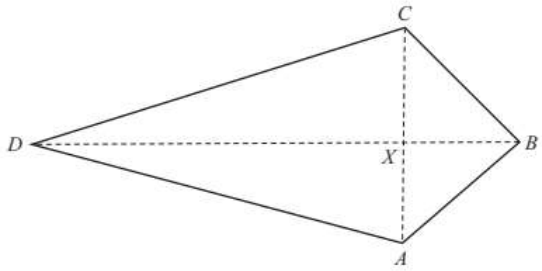
0580/23/M/J/12 Q21)

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23. ABCD is a kite.

The diagonals AC and BD intersect at X.

AC= 12 cm, BD= 20 cm and DX : XB= 3 : 2 .



(a)Calculate angle ABC. [3]

(b) Calculate the area of the kite. [2]

0580/21/O/N/13 Q21)

24. (a) The angles of a triangle are in the ratio

2 : 3 : 5.

(i) Show that the triangle is right-angled.[1]

(ii) The length of the hypotenuse of the triangle is 12 cm.

Use trigonometry to calculate the length of the shortest side of this triangle. [3]

(b) The sides of a different right-angled triangle are in the ratio 3 : 4 : 5.

(i) The length of the shortest side is 7.8 cm.

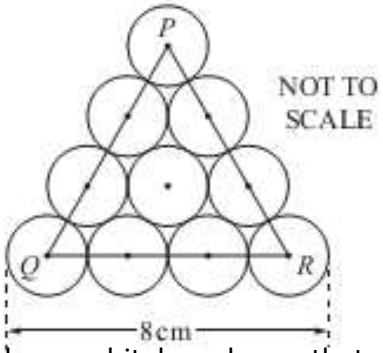
Calculate the length of the longest side. [2]

(ii) Calculate the smallest angle in this triangle. [3]

0580/43/O/N/17 Q1)

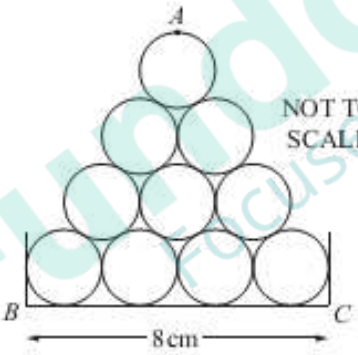
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25. (a) The ten circles in the diagram each have radius 1 cm.
The centre of each circle is marked with a dot. Calculate
the height of triangle PQR. [3]



(b) Mr Patel uses whiteboard pens that are
cylinders of radius 1 cm.

(i) The diagram shows 10 pens stacked in a tray.
The tray is 8 cm wide.



The point A is the highest point in the stack.
Find the height of A above the base,
BC, of the tray.[1]

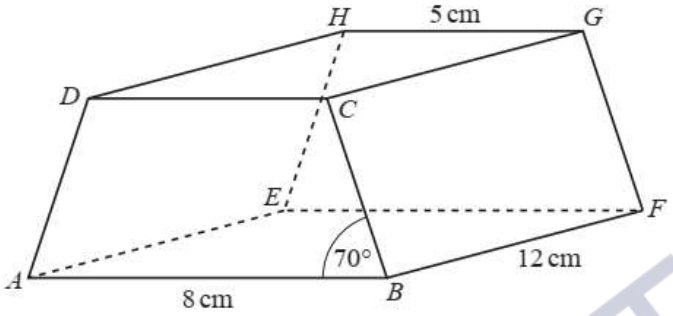
0580/42/F/M/16 Q10)

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26. The diagram shows a prism with a rectangular base, *ABFE*.

The cross-section, *ABCD*, is a trapezium with *AD* = *BC*.

AB = 8cm, *GH* = 5cm, *BF* = 12cm and angle *ABC* = 70°.



(a) Calculate the total surface area of the prism. [6]

(b) The perpendicular from G onto EF meets EF at X.

(i) Show that EX = 6.5cm. [1]

(ii) Calculate AX. [2]

(iii) ~~Calculate the angle between the diagonal AG and the base ABFE.~~ [2]

0580/42/O/N/20 Q9)

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Answers

Q1) 53.1	Q16) 16.8
Q2) 6.88	Q17) (a) 530 (c)(i) 28.1
Q3) 66.4	Q18) (i) 116.6 (ii) 13.4 (iii) 10.4 ~~(iv) 130~~
Q4) 75.1	Q19) 6.61
Q5) (a) 2.24 (b) 3.22	Q20) (ii) $(x+15)(x-8)$ (iii) –15 and 8 (iv)15
Q6) (a) 45.9 (b) 33[.0]	Q21) (b) $(2x-5)(x+4) = 0$ and x = 2.5 and -4 (c)11.7
Q7) 41.0	Q22) (a) 7.55 (b) 41.5
Q8) 9.11	Q23) (a) 73.7 (b) 120
Q9) 28	Q24) (a)(ii) 7.05 (b)(i) 13 (b)(ii) 36.9
Q10) 7.61	Q25) (a) 5.2[0](b)(i) 7.2[0]
Q11) 234	Q26) (a)315 (b)(i)$8-\frac{1}{2}(8-5)$ (ii) 13.6 (iii)16.8
Q12) 452	
Q13) (a)440 (b)3min 20sec	
Q14) 36.9°	
Q15) 7.62	

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