



**SEMBAWANG SECONDARY SCHOOL  
WEIGHTED ASSESSMENT THREE  
SECONDARY TWO**



CANDIDATE  
NAME

CLASS:

INDEX  
NUMBER

|                      |                      |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |
|----------------------|----------------------|

---

**MATHEMATICS**

**K310**

**Aug 2026**

**45 minutes**

Candidates answer on the Question Paper.

---

**READ THESE INSTRUCTIONS FIRST**

Write your name, class and index number in the spaces at the top of this page.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

Answer **all** the questions.

The number of marks is given in brackets [ ] at the end of each question or part question.

If working is needed for any question it must be shown with the answer.

Omission of essential working will result in loss of marks.

The total of the marks for this paper is 30.

The use of an approved scientific calculator is expected, where appropriate.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.

For  $\pi$ , use either your calculator value or 3.142.

| FOR EXAMINER'S USE |                |
|--------------------|----------------|
| TOTAL              | <div></div> 30 |

Setter: Ms Isabelle Khoo

---

This document consists of **9** printed pages and **1** blank page.

[Turn over

***Mathematical Formulae****Compound interest*

$$\text{Total amount} = P \left( 1 + \frac{r}{100} \right)^n$$

*Mensuration*

$$\text{Curved surface area of a cone} = \pi r l$$

$$\text{Surface area of a sphere} = 4\pi r^2$$

$$\text{Volume of a cone} = \frac{1}{3} \pi r^2 h$$

$$\text{Volume of a sphere} = \frac{4}{3} \pi r^3$$

$$\text{Area of triangle } ABC = \frac{1}{2} ab \sin C$$

$$\text{Arc length} = r\theta, \text{ where } \theta \text{ is in radians}$$

$$\text{Sector area} = \frac{1}{2} r^2 \theta, \text{ where } \theta \text{ is in radians}$$

*Trigonometry*

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

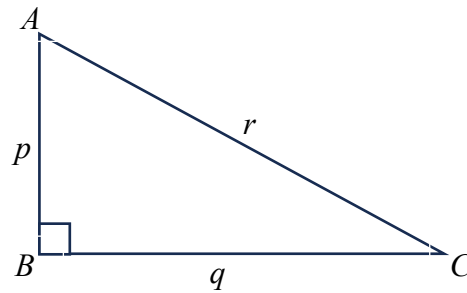
$$a^2 = b^2 + c^2 - 2bc \cos A$$

*Statistics*

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

Answer all the questions.

- 1 The diagram shows a right-angle triangle  $ABC$ .



Write down an expression, in terms of  $p$ ,  $q$  and/or  $r$ , for each of the following.

- (a)  $\cos$  angle  $BAC$

Answer ..... [1]

- (b)  $\tan$  angle  $ACB$

Answer ..... [1]

- 2 (a) 6 workers can paint 3 rooms in 2 hours. Given that all the workers paint at the same rate, find how much **more** time it will take two workers to paint 15 rooms.

Answer ..... hours [2]

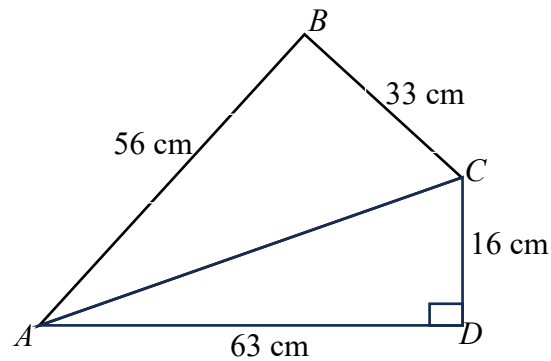
[Turn over]

(b) Given that  $y$  is directly proportional to the cube root of  $x$ .

Find the percentage change in  $y$  when the value of  $x$  is multiplied by 64 times.

Answer ..... % [2]

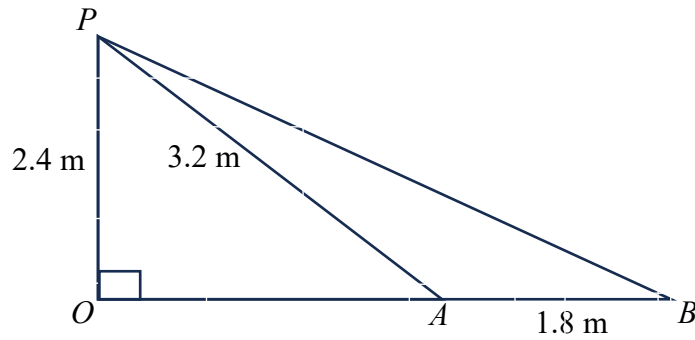
- 3 In the diagram,  $ABCD$  is a quadrilateral.  
 $AB = 56$  cm,  $BC = 33$  cm,  $AD = 63$  cm and  $CD = 16$  cm and angle  $ADC = 90^\circ$ .



Show that  $ABC$  is a right-angled triangle.

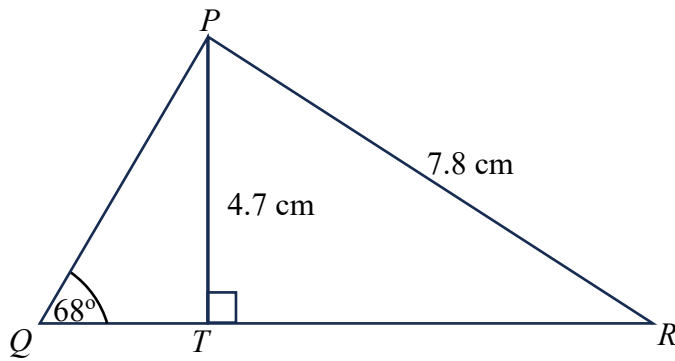
Answer .....  
 .....  
 ..... [3]

- 4 A tent pole  $OP$ , 2.4 m tall, stands vertically.  
 Jey ties a 3.2 m long rope,  $AP$ , from the top of the pole to a peg at  $A$ .  
 A second longer rope,  $BP$ , runs from the top of the pole to a peg at  $B$ .  
 $B$  lies on the same straight line as  $O$  and  $A$ , 1.8 m further from the pole than  $A$ .  
 Calculate the angle that rope  $BP$  makes with the pole.



Answer ..... ° [3]

- 5  $PQR$  is a triangle and  $PT$  is perpendicular to  $QR$ .  
 $PT = 4.7$  cm,  $PR = 7.8$  cm and angle  $PQT = 68^\circ$ .



- (a) Find the length of  $QT$ .

Answer ..... cm [2]

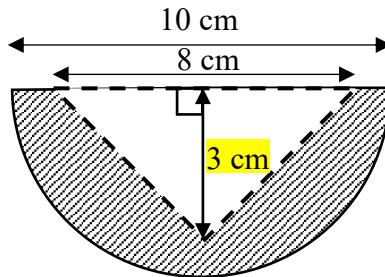
- (b) Find angle  $PRT$ .

Answer .....  $^\circ$  [2]

- (c) Find the shortest (perpendicular) distance from  $R$  to  $PQ$ .

Answer ..... cm [2]

- 6 The diagram shows the cross-section of a **solid** formed by removing a cone from one end of a hemisphere. The hemisphere has diameter 10 cm. The cone has diameter 8 cm and height 3 cm.



- (a) Show that the volume of the solid is  $212 \text{ cm}^3$ , corrected to 3 significant figures.

*Answer*

[2]

- (b) Convert  $212 \text{ cm}^3$  to  $\text{m}^3$ .

*Answer* .....  $\text{m}^3$  [1]

[Turn over

- (c) The solid is made from a material with density  $1.15\text{g/cm}^3$ .  
Calculate the mass of the solid in kilograms.

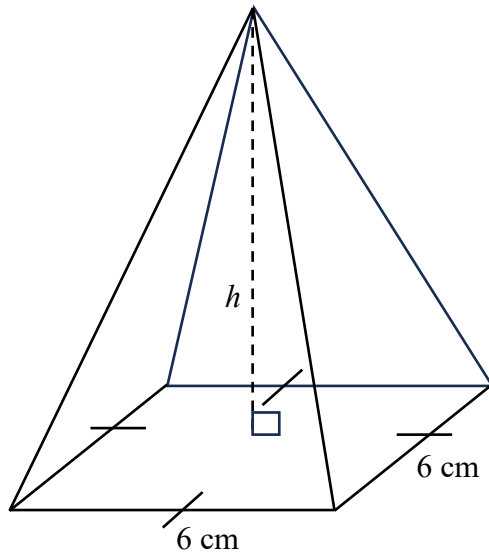
$$(\text{Density} = \frac{\text{mass}}{\text{volume}})$$

*Answer* ..... kg [2]

- (d) The solid is melted into cubes of length 2 cm. Find the greatest number of cubes that can be formed from the solid.

*Answer* ..... cubes [2]

- 7 The diagram shows an ornament in the shape of a square pyramid.  
The length of the square is 6 cm and the volume of the pyramid is  $108 \text{ cm}^3$ .



- (a) Show that the height,  $h$ , of the pyramid is 9 cm.

*Answer*

[2]

- (b) Find the total surface area of the pyramid.

*Answer* .....  $\text{cm}^2$  [3]

[Turn over

***BLANK PAGE***