

Part 1: Multiple Choice. 5 marks

___ / 25 = ___ %

Place the letter of the correct response in the space provided on the right.

1. Which of the following IS a perfect square?

1. B

- A. 0.169 B. $\frac{25}{9}$ C. $\frac{27}{16}$ D. 4.9

2. The area of a square garden is 5.76m^2 . What is the *perimeter* of the garden?

2. C

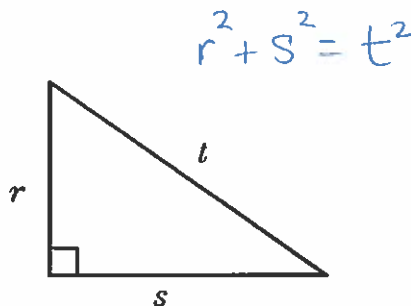
- A. 2.4 m
B. 2.88 m
C. 9.6 m
D. 11.52 m

$\sqrt{5.76} = 2.4$
 $2.4 \times 4 = 9.6$

3. For the triangle to the right, which statement is correct according to the Pythagorean Theorem?

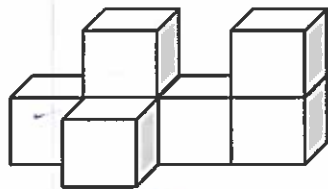
3. C

- A. $r^2 + t^2 = s^2$
B. $s^2 + t^2 = r^2$
C. $r^2 + s^2 = t^2$
D. $t = r + s$



4. What is the surface area, in cm^2 , of the composite object consisting of seven 1-cm cubes?

4. B



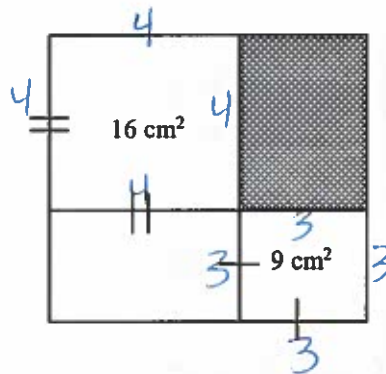
- A. 26 B. 30 C. 36 D. 42

7 blocks \times 6 faces
 $= 42$
6 overlaps \times 2 $= 12$
 $42 - 12 = 30$

5. A large square is divided into four sections, two of which are also squares. What is the area of the shaded region in cm^2 ?

5. B

- A) 5
B) 12
C) 25
D) 144

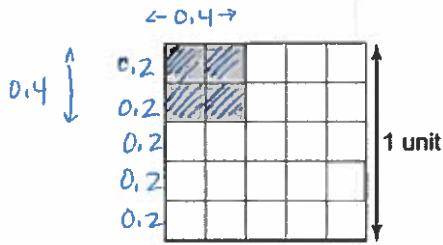


shaded area
 4×3
 $= 12$

Part 2: Long Answer Questions. 20 marks

Answer ALL questions in the space provided. Show ALL working to received FULL credit.

1. With the aid of the diagram, what is $\sqrt{0.16}$? ___ / 1



$$\sqrt{0.16} = 0.4$$

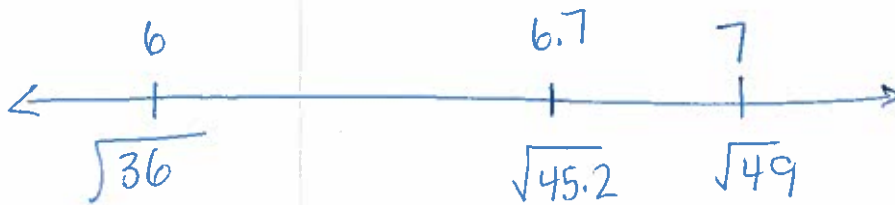
2. Without the use of a calculator, determine the value of each square root. ___ / 3

a) $\sqrt{\frac{169}{81}}$

b) $\sqrt{1.44} = 1.2$

$$\frac{\sqrt{169}}{\sqrt{81}} = \frac{13}{9}$$

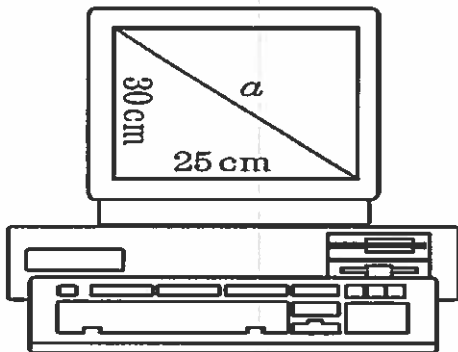
3. Using benchmarks, approximate $\sqrt{45.2}$ to the nearest tenth. ___ / 3



$$\begin{array}{r} 6.7 \\ \times 6.7 \\ \hline 44.89 \end{array}$$

$$\sqrt{45.2} \sim 6.7$$

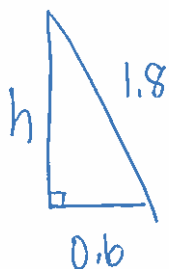
4. Calculate the length of the diagonal of the computer monitor, correct to one decimal place. ___ / 2



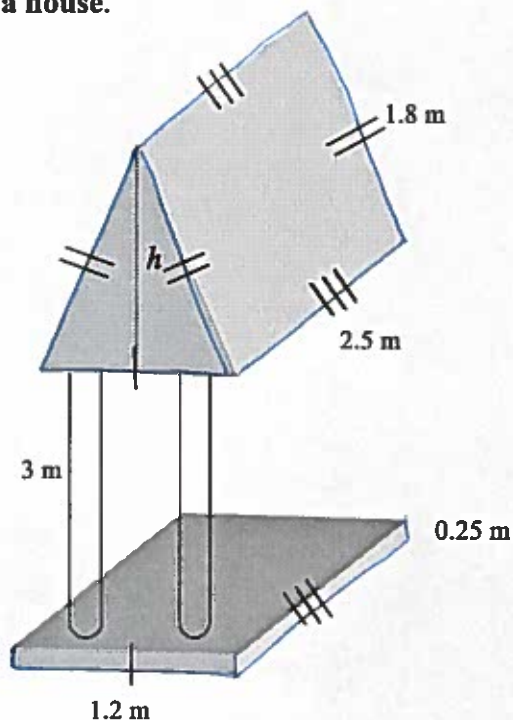
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 30^2 + 25^2 &= c^2 \\ 900 + 625 &= c^2 \\ \sqrt{1525} &= c \\ c &= 39.1 \text{ cm} \end{aligned}$$

5. The porch to the right is attached to the front of a house.

a) What is the height, h , of the roof? ___ / 3



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 0.6^2 + h^2 &= 1.8^2 \\
 0.36 + h^2 &= 3.24 \\
 h^2 &= 3.24 - 0.36 \\
 h^2 &= 2.88 \\
 h &= \sqrt{2.88} \\
 h &= 1.7\text{m}
 \end{aligned}$$



b) The roof, columns, and base of this porch are to be painted.
 The radius of the columns is 0.15 m.
 What is the area to be painted, to the nearest tenth square metre?

___ / 8

Bottom Rectangular Prism

Top $\rightarrow 1.2 \times 2.5 = 3$

Left/Right $= 2.5 \times 0.25 = 0.625 + 0.625$

Front $= 1.2 \times 0.25 = 0.3$

4.55 m²

Cylinder \rightarrow only rectangular section

$= 2\pi r h$

$= 2(3.14)(0.15)(3) = 2.826\text{m}^2$

2.826 m²

Roof

Front $= \frac{bh}{2} = \frac{1.2 \times 1.7}{2} = 1.02$

Side $= 1.8 \times 2.5 = 4.5$

Side $= 1.8 \times 2.5 = 4.5$

Bottom $= 1.2 \times 2.5 = 3$

13.02 m²

Total: 20.396 m²

or 20.4 m²

no back

no back