Grade 9 Math   UNIT 1: *Square Roots and Surface Area* **– SAMPLE TEST**

Part 1: Multiple Choice. **5 marks**   ____ / 25 = _____ %

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

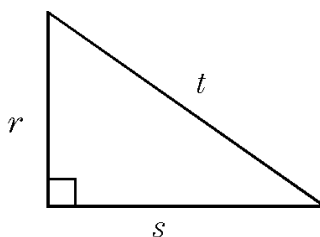1. Which of the following IS a perfect square?   1. ____

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

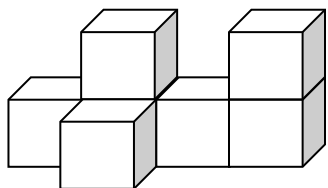2. The area of a square garden is $5.76m^2$. What is the **perimeter** of the garden?   2. ____

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

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

    A. $r^2 + t^2 = s^2$

    B. $s^2 + t^2 = r^2$
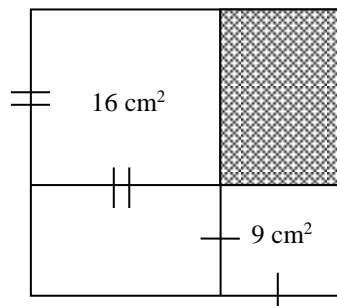
    C. $r^2 + s^2 = t^2$

    D. $t = r + s$

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

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

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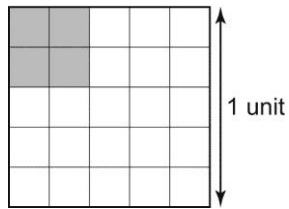   What is the area of the shaded region in cm^2?

    A) 5

    B) 12

    C) 25

    D) 144

    16 cm²

    9 cm²

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

1 unit

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

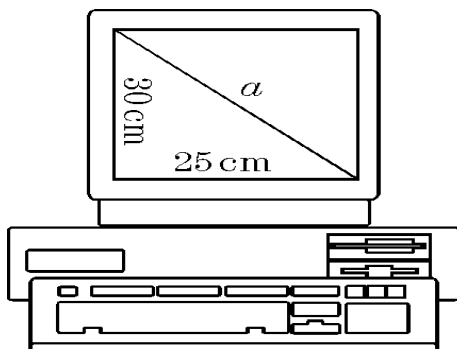   **a)** $\sqrt{\dfrac{169}{81}}$ **b)** $\sqrt{1.44}$

3. Using benchmarks, approximate $\sqrt{45.2}$ to the nearest tenth.   ___ / 3
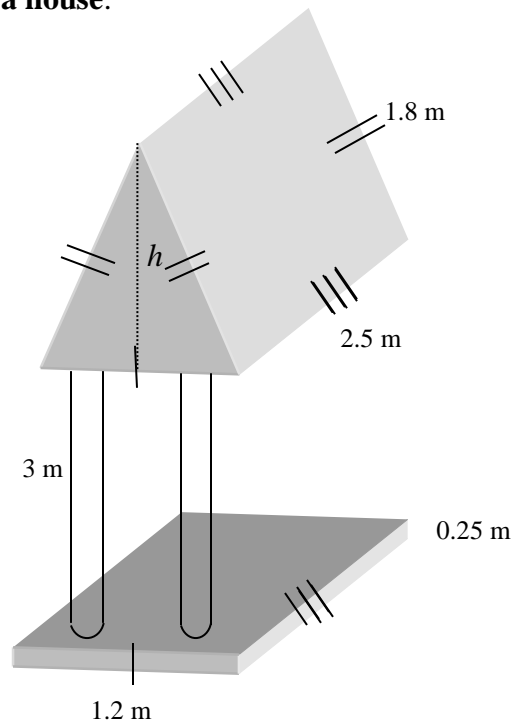
4. Calculate the length of the diagonal of the computer monitor, correct to one decimal place.

                                                                                                            ___ / 2

a

30 cm

25 cm

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

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

1.8 m

h

2.5 m

3 m

0.25 m

1.2 m

b) The roof, columns, and base of this porch are to be painted.   ___ / 8
    The radius of the columns is 0.15 m.
    What is the area to be painted, to the nearest tenth square metre?