

Unit Review - KEY

February-08-14 12:09 PM

Math 9

Chapter 1 Review

Name KEY

1. Which numbers below are perfect squares? How do you know?

a) $\frac{25}{121} = \frac{5^2}{11^2}$
Yes

b) $2.89 = 1.7^2$
Yes

c) $\frac{2}{50} = \frac{1}{25}$
Yes $= \frac{1^2}{5^2}$

d) $0.004 = \sqrt{0.004}$
No!
is a non-term.,
non-repeating decimal

2. Calculate the perfect square whose square root is:

a) $\left(\frac{5}{7}\right)^2 = \frac{25}{49}$

b) $(1.6)^2 = 2.56$

c) $(0.92)^2 = 0.8464$

d) $\left(\frac{10}{9}\right)^2 = \frac{100}{81}$

3. Determine the value of each square root.

a) $\sqrt{\frac{225}{49}} = \frac{15}{7}$

b) $\sqrt{\frac{9}{25}} = \frac{3}{5}$

c) $\sqrt{\frac{400}{324}} = \frac{20}{18}$

d) $\sqrt{\frac{8}{98}} = \sqrt{\frac{4}{49}} = \frac{2}{7}$

4. Determine the value of each square root.

a) $\sqrt{6.76} = 2.6$

b) $\sqrt{327.61} = 18.1$

c) $\sqrt{0.0025} = 0.05$

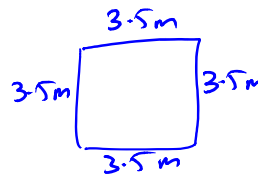
d) $\sqrt{0.0225} = 0.15$

5. The area of a square garden is 12.25 m^2 .

a. Determine the perimeter of the garden.

Side length = $\sqrt{12.25} = 3.5 \text{ m}$

Perimeter = $4 \times 3.5 = 14 \text{ m}$



b. The owner decides to put a gravel pathway around the garden.

This reduces the area of the garden by 4.96 m^2 .

What is the new side length of the garden?

New area = $12.25 - 4.96 = 7.29 \text{ m}^2$

New side length = $\sqrt{7.29}$

$= 2.7 \text{ m}$

6. Which numbers below are perfect squares? How do you know?

a) $\sqrt{\frac{16}{53}}$ NO
 ↑
 nbr a ps

b) $\sqrt{\frac{1}{25}} = \frac{1}{5}$
 Yes

c) $\sqrt{0.009}$ NO
 value is nbr term. and nbr repeating

d) $\sqrt{10.24} = 3.2$
 Yes.

7. Use benchmarks to approximate each square root to the nearest tenth.

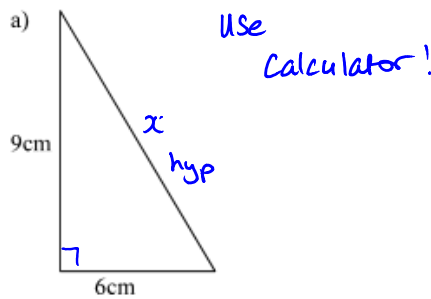
a) $\sqrt{11.6}$
 $\swarrow \searrow$
 $\sqrt{9} \quad \sqrt{16}$
 3.4

b) $\sqrt{0.39}$
 $\swarrow \searrow$
 $\sqrt{0.36} \quad \sqrt{0.49}$
 0.62

c) $\sqrt{\frac{21}{2}} = \sqrt{10.5}$
 $\swarrow \searrow$
 $\sqrt{9} \quad \sqrt{16}$
 3.2

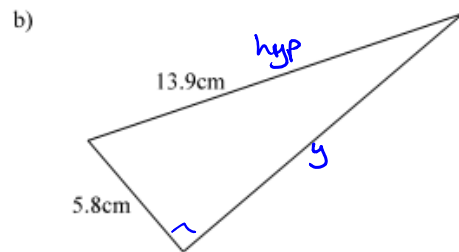
d) $\sqrt{\frac{11}{52}} = \sqrt{0.21}$
 $\swarrow \searrow$
 $\sqrt{0.16} \quad \sqrt{0.25}$
 0.46

8. In each triangle, determine the unknown length to the nearest tenth of a unit where necessary.



$$x^2 = 9^2 + 6^2 = 117$$

$$x = \sqrt{117} \approx 10.8 \text{ cm}$$



$$y^2 = 13.9^2 - 5.8^2 = 159.57$$

$$y = \sqrt{159.57} \approx 12.6 \text{ cm}$$

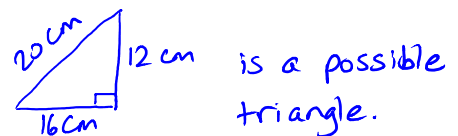
9. Given, are the sides of two triangles. Are they right triangles?

a. 10, 13, 15

check if:
 $15^2 = 10^2 + 13^2$?
 $225 = 100 + 169$?
 No!

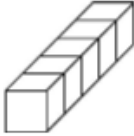
b. 12, 16, 20


check if: $20^2 = 12^2 + 16^2$?
 $400 = 144 + 256$?
 Yes!

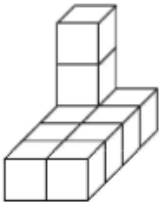


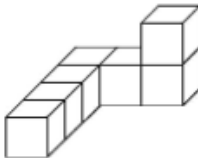
10. Each cube has edge length 1 unit. Determine the surface area of each object.

each face = 1 unit²

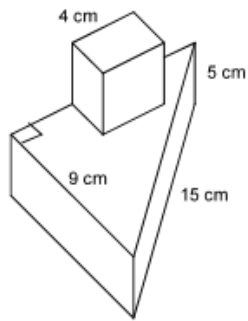
a)  4 overlaps
5 cubes
 $\Rightarrow (5 \times 6) - (4 \times 2)$
 $= 22$

b)  3 overlaps
4 cubes
 $\Rightarrow (4 \times 6) - (3 \times 2)$
 $= 18$

c)  12 overlaps
10 cubes
 $\Rightarrow (10 \times 6) - (12 \times 2)$
 $= 36$

d)  6 overlaps
7 cubes
 $\Rightarrow (7 \times 6) - (6 \times 2)$
 $= 30$

11. A 4-cm cube is attached to the top of a right triangular prism as shown. Determine the surface area of the composite object, to the nearest square centimetre.



Skip for now!! 😊