

Name: _____

Review

Radicals and the Pythagorean Theorem

Simplify each expression. Put a rectangle around your answer.

1) $\sqrt{512}$

2) $\sqrt{216}$

3) $\sqrt{100x^2}$

4) $\sqrt{80a^3}$

5) $\sqrt{75x^6y^5}$

6) $-4\sqrt{192xy^4}$

7) $\pm 3x\sqrt{45x^3y^2}$

8) $\sqrt{3} \cdot \sqrt{15}$

9) $4\sqrt{3} \cdot 5\sqrt{21}$

10) $\sqrt{13x^4} \cdot \sqrt{13x^4}$

11) $\sqrt{20xy^2} \cdot \sqrt{30xy^3}$

12) $\sqrt{\frac{81}{100}}$

13) $\sqrt{\frac{20}{45}}$

14) $\frac{7}{\sqrt{6}}$

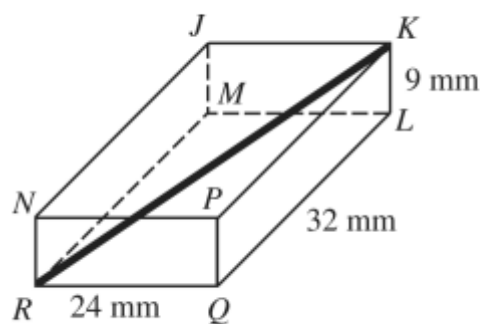
15) $\sqrt{\frac{9}{2}}$

16) $\frac{12\sqrt{10}}{\sqrt{15}}$

Use the Pythagorean Theorem to answer the following. Each problem requires a diagram if one is not given. Show all work. Simplify your answer **and** then approximate to the nearest tenth. Include units in your solution.

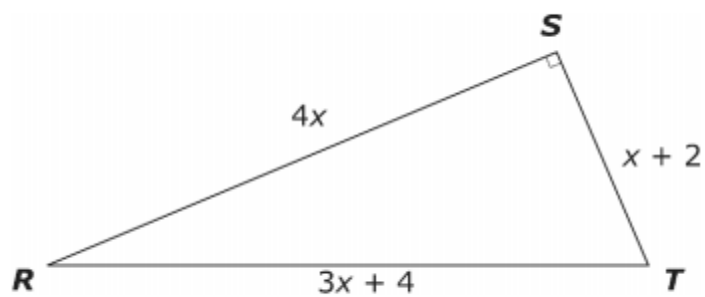
- 17) Two people leave from the same point. One travels 12 meters north. The other travels 9 meters east. How far apart are they?

- 18) A rectangular prism is shown in the diagram below.



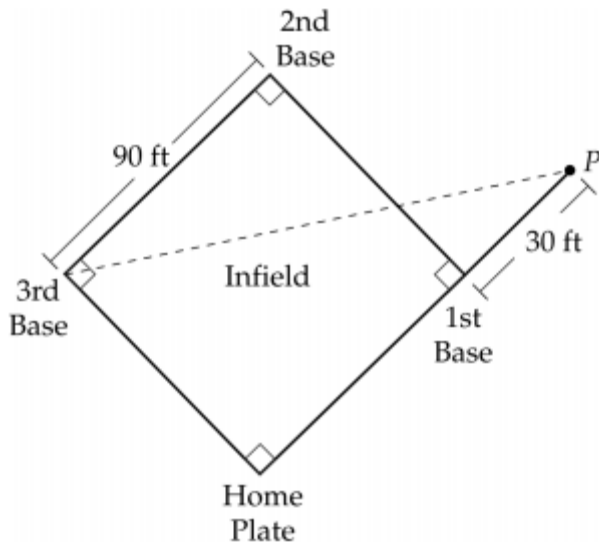
What is the length of the line segment that between vertex K and vertex R ?

- 19) Triangle RST is shown.



How many units long is \overline{RS} ?

- 20) A diagram of a baseball field is shown below. The infield is a square that measures 90 feet on each side.



Note: The figure is not drawn to scale.

A player threw a ball from point P to third base. How far did the player throw the ball?

- 21) Answer the multiple choice question by circling the appropriate letter.

Which set of numbers represents the lengths of the sides of a right triangle?

- A. $\{2, 6, \sqrt{40}\}$ B. $\{2, 18, 20\}$ C. $\{4, 6, \sqrt{40}\}$ D. $\{4, 36, 40\}$

- 22) Calculate the distance between the two given points. Simplify your answer **and** then approximate to the nearest tenth. Show ALL work using the distance formula.

a) $(-2, 4)$ **and** $(-5, -8)$

b) $(-5, 3)$ **and** $(1, -11)$