

### Answers to Extra Test Review Part 1 (ID: 1)

- |                                |                            |                           |                           |
|--------------------------------|----------------------------|---------------------------|---------------------------|
| 1) 10                          | 2) $3\sqrt{7}$             | 3) $5n\sqrt{3n}$          | 4) $2\sqrt{2m}$           |
| 5) -20                         | 6) 15                      | 7) $40\sqrt{5}$           | 8) $2\sqrt{15}$           |
| 9) $-12\sqrt{10} + 18\sqrt{5}$ | 10) $5\sqrt{3} + 3$        | 11) $3\sqrt{2}$           | 12) 2                     |
| 13) $\frac{3\sqrt{15}}{5}$     | 14) $-\frac{\sqrt{5}}{25}$ | 15) $\frac{4\sqrt{3}}{3}$ | 16) $\frac{\sqrt{15}}{5}$ |
| 17) $\frac{5\sqrt{3}}{3}$      | 18) $\frac{\sqrt{10}}{5}$  |                           |                           |

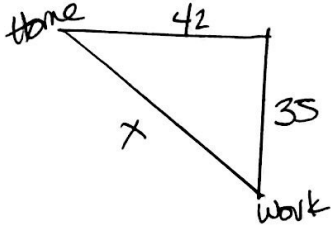
### Answers to Extra Test Review Part 2

- |   |                            |                           |                         |
|---|----------------------------|---------------------------|-------------------------|
| 1) $2\sqrt{14}$ cm                                    | 2) $4\sqrt{15}$ km         | 3) $\sqrt{181}$ in        | 4) $5\sqrt{3}$ mi       |
| 5) $\sqrt{89}$ m                                      | 6) $3\sqrt{23}$ cm         | 7) $m = 2\sqrt{3}, n = 3$ | 8) $u = 7\sqrt{3}, v =$ |
| 9) $x = \frac{9\sqrt{2}}{2}, y = \frac{9\sqrt{2}}{2}$ | 10) $x = 2, y = 1$         | 11) $x = 10, y = 5$       |                         |
| 12) $x = 6, y = 3\sqrt{2}$                            | 13) $x = 4, y = 2\sqrt{2}$ | 14) $x = 5, y = 5$        | .                       |

Practice Part 3

**DRAW A PICTURE AND SHOW ALL WORK!** Remember: you are either using the Pythagorean theorem or your special right triangles! Leave your answers in simplest radical form unless specified otherwise.

1. Jimmy is on his way home from work. He drives 35 miles due North and then 42 miles due West. Find the shortest distance, rounded to one decimal place, he can cover to reach home early.



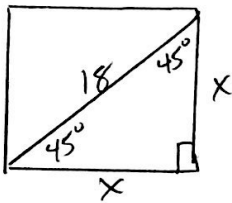
$$42^2 + 35^2 = x^2$$

$$1764 + 1225 = x^2$$

$$2889 = x^2$$

$$x \approx 54.7 \text{ miles}$$

2. Joshua won a laptop in a school raffle. The laptop is actually in the shape of a square, with a diagonal of 18 inches. What is the height of the laptop?



$$\frac{18}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{18\sqrt{2}}{2} = 9\sqrt{2}$$

$$\text{Height} = 9\sqrt{2} \text{ inches}$$

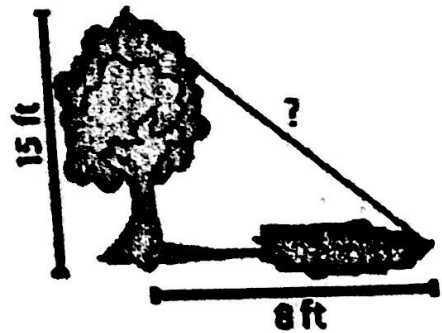
3. A 15 foot tree casts a shadow that is 8 feet long. What is the distance from the tip of the tree to the tip of its shadow?

$$15^2 + 8^2 = x^2$$

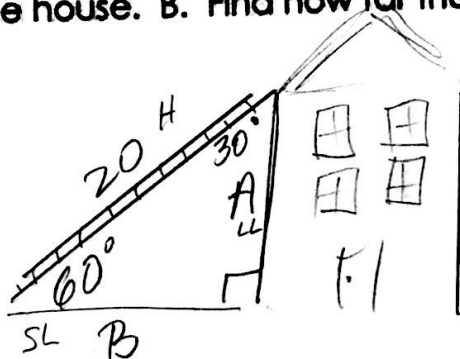
$$225 + 64 = x^2$$

$$289 = x^2$$

$$x = 17 \text{ feet}$$



4. A 20 foot ladder is leaning against a house at a 60 degree angle. A. Find how high up the ladder is on the house. B. Find how far the foot of the ladder is from the base of the house.



$$A = 10\sqrt{3} \text{ feet}$$

$$B = 10 \text{ feet}$$