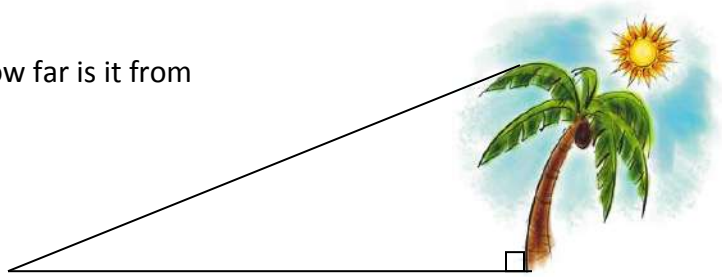
Name _____ Date _____

Pythagorean Theorem

1. Rob is putting up new siding on his house. He has a ladder that is 22 feet long. Rob's wife doesn't want him trampling through the landscaping which goes out 8 feet from the side of the house. Rob needs to have the ladder reach the house 20 ft off the ground. Will it reach? At what height off the ground will the ladder hit the house? Round your answer to the nearest tenth.

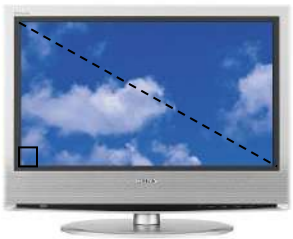
$$a^2 + b^2 = c^2$$

2. A 15 ft tall tree has a shadow that is 25 ft long. How far is it from the end of the shadow to the top of the tree? Round your answer to the nearest tenth.



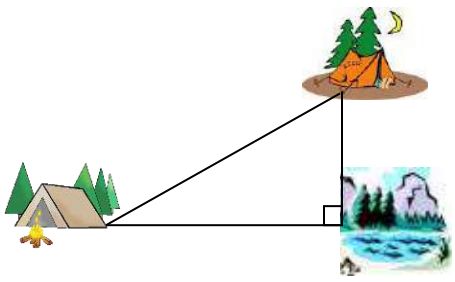
$$a^2 + b^2 = c^2$$

3. A flat screen television has a diagonal length of 40 inches. The base is 36 inches across. What is the height of the television? Round your answer to the nearest tenth.



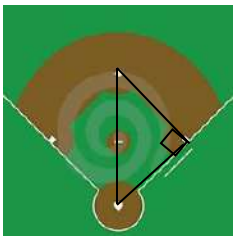
$$a^2 + b^2 = c^2$$

4. Two families went camping. The Becker family was 4 miles west of the campsite lake. The Dunn family was 3 miles north of the lake. How far apart are the Becker and Dunn campsites from each other?

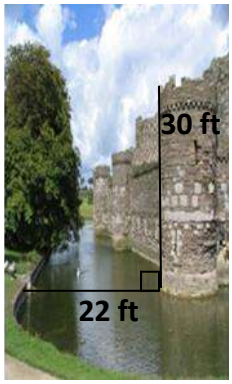


$$a^2 + b^2 = c^2$$

5. On a baseball field, the distance between bases is 90 ft. How far does a catcher have to throw the ball from home to 2nd base? Round your answer to the nearest tenth.



$$a^2 + b^2 = c^2$$

6. 

A castle that is 30 feet tall has moat surrounding it that is 22 feet wide. How long must a ladder be in order for someone to get from one side of the moat to the top of the castle? Round your answer to the nearest tenth.

$$a^2 + b^2 = c^2$$

7. The width of a bowling lane is 40 inches. A bowler releases a ball on the right side of the foul line (see picture) and aims for the left corner pin, and it travels 720 in. What is the length of the bowling lane? Round your answer to the nearest tenth.

$$a^2 + b^2 = c^2$$

8. 

The length of a football field, not including the end zones, is 100 yards, and the width is 53.5 yards. How much farther would a person have to run if he ran from point X to point Y then to point Z instead of running straight from point X to point Z? Round your answer to the nearest tenth.

$$a^2 + b^2 = c^2$$

Name _____**ANSWER KEY**_____ Date _____

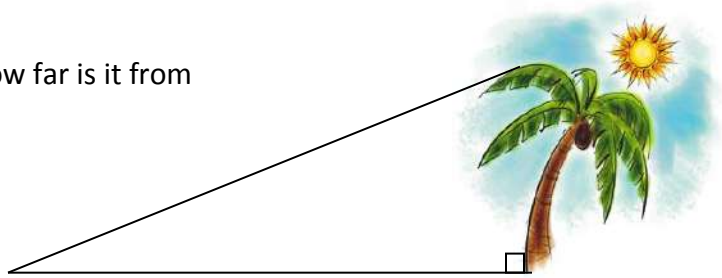
Pythagorean Theorem

1. Rob is putting up new siding on his house. He has a ladder that is 22 feet long. Rob's wife doesn't want him trampling through the landscaping which goes out 8 feet from the side of the house. Rob needs to have the ladder reach the house 20 ft off the ground. Will it reach? At what height off the ground will the ladder hit the house? Round your answer to the nearest tenth.

$$a^2 + b^2 = c^2$$

Yes, it will reach. The ladder will hit the house 20.5 ft off the ground.

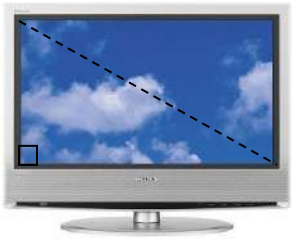
2. A 15 ft tall tree has a shadow that is 25 ft long. How far is it from the end of the shadow to the top of the tree? Round your answer to the nearest tenth.



$$a^2 + b^2 = c^2$$

29.2 ft

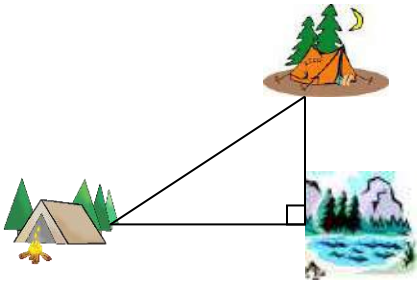
3. A flat screen television has a diagonal length of 40 inches. The base is 36 inches across. What is the height of the television? Round your answer to the nearest tenth.



$$a^2 + b^2 = c^2$$

17.4 in

4. Two families went camping. The Becker family was 4 miles west of the campsite lake. The Dunn family was 3 miles north of the lake. How far apart are the Becker and Dunn campsites from each other?



$$a^2 + b^2 = c^2$$

5 mi

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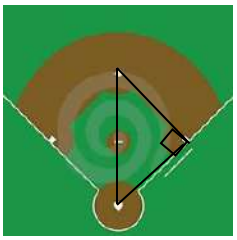
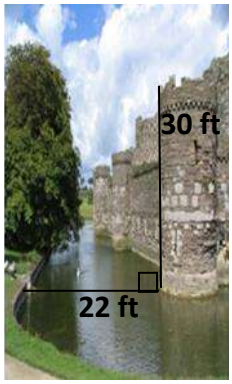


$$a^2 + b^2 = c^2$$

127.3 ft

6. 

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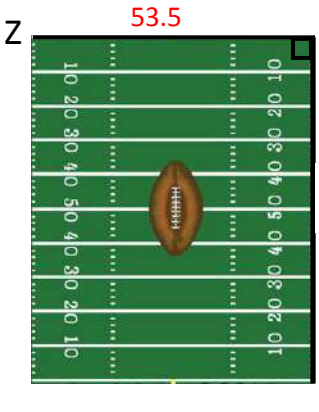
$$a^2 + b^2 = c^2$$

37.2 ft

7. The width of a bowling lane is 40 inches. A bowler releases a ball on the right side of the foul line (see picture) and aims for the left corner pin, and it travels 720 in. What is the length of the bowling lane? Round your answer to the nearest tenth.

$$a^2 + b^2 = c^2$$

718.9 in

8. 

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$$a^2 + b^2 = c^2$$

XZ = 113.4 yds

XYZ = 153.5 yds

153.5 – 113.4 = **40.1 yds**