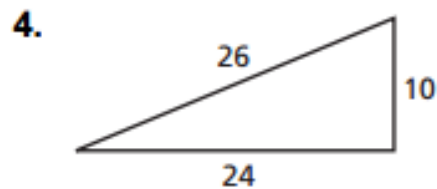
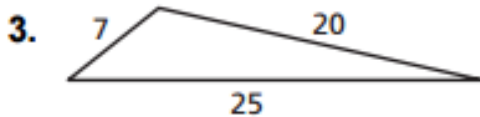


# Review on "Distance" and "Pythagorean" Formulas

1. What is the Pythagorean Theorem?
2. What is the Distance Formula?

**Tell whether the triangle with the given side lengths is a right triangle.**

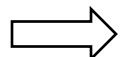


**Find the distance between the two points.**

5.  $(2, -4), (3, -1)$
6.  $(3, 2), (7, 5)$
7.  $(-9, -2), (-7, 5)$
8. The side of the clip on a clip board appears to be a right triangle. The leg lengths are 2 millimeters and 2.1 millimeters and the hypotenuse is 2.9 millimeters. Is the side of the clip a right triangle?

**Tell whether a triangle with the given side lengths is a right triangle.**

9. 18, 80, 82
10.  $\sqrt{28}, 63, 65$
11. 2,  $\sqrt{96}, 10$
12. You are standing 6 feet away from the stage and your friend is standing 7 feet away from the stage.
  - a. You are standing on a platform, which places your eyes at 6.5 feet. What is the distance from your eyes to the stage?
  - b. Your friend's eyes are at 5 feet. What is the distance from your friend's eyes to the stage?
  - c. Do you or your friend have a closer visual?



**Use the Pythagorean Theorem to solve each problem. Round each answer to the nearest tenth.**

13) A soccer field is 90 meters wide and 120 meters long. The coach asks the players to run diagonally across the field. How long is this distance?

13) \_\_\_\_\_

**Use the Pythagorean Theorem to solve each problem. Round to the nearest tenth.**

14) A 52 inch television has a length of 40 inches. How wide is the TV?

14) \_\_\_\_\_

15) A building is 30 feet tall. The owner wants to put a slide from the top of the building to 10 feet from the base of the building. How long will the slide be?

15) \_\_\_\_\_

16) A square has an area of  $100 \text{ ft}^2$ . What is the length of the diagonal of the square?

16) \_\_\_\_\_

**Review Problems**

17) The yearbook club and the drama club have a total of 64 students. The drama club has 10 more students than the yearbook club. How many students are in each club? Write a system of equations and solve.

17) \_\_\_\_\_

18) Write an equation in slope-intercept form with a slope of -3 and passes through the point (-1, 8).

18) \_\_\_\_\_

# Review on "Distance" and "Pythagorean" Formulas

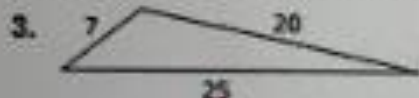
1. What is the Pythagorean Theorem?

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

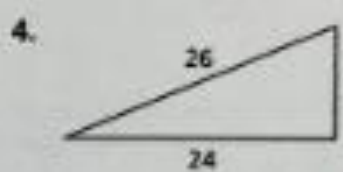
2. What is the Distance Formula?

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Tell whether the triangle with the given side lengths is a right triangle.



$$20^2 + 7^2 \stackrel{?}{=} 25^2$$
$$449 = 625 \quad \text{NO!}$$



$$10^2 + 24^2 \stackrel{?}{=} 26^2$$
$$676 = 676$$

YES!

Find the distance between the two points.

5.  $(2, -4), (3, -1)$   $\sqrt{10} \approx 3.2$

6.  $(3, 2), (7, 5)$  5

7.  $(-9, -2), (-7, 5)$   $\sqrt{53} \approx 7.3$

8. The side of the clip on a clip board appears to be a right triangle. The leg lengths are 2 millimeters and 2.1 millimeters and the hypotenuse is 2.9 millimeters. Is the side of the clip a right triangle?

$$2^2 + 2.1^2 \stackrel{?}{=} 2.9^2$$
$$8.41 = 8.41$$

YES!

Tell whether a triangle with the given side lengths is a right triangle.

9. 18, 80, 82 YES!

10.  $\sqrt{28}, 63, 65$  NO!

11. 2,  $\sqrt{96}, 10$  YES!

12. You are standing 6 feet away from the stage and your friend is standing 7 feet away from the stage.

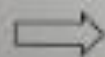
a. You are standing on a platform, which places your eyes at 6.5 feet.

What is the distance from your eyes to the stage?  $\approx 8.8$  ft

b. Your friend's eyes are at 5 feet. What is the distance from your friend's eyes to the stage?  $\approx 8.6$  ft

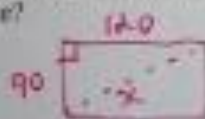
c. Do you or your friend have a closer visual?

your friend.



Use the Pythagorean Theorem to solve each problem. Round each answer to the nearest tenth.

13) A soccer field is 90 meters wide and 120 meters long. The coach asks the players to run diagonally across the field. How long is this distance?

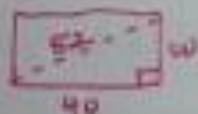


$$\begin{aligned} 90^2 + 120^2 &= c^2 \\ 8100 + 14400 &= c^2 \\ 22500 &= c^2 \\ 150 &= c \end{aligned}$$

13) 150 ft

Use the Pythagorean Theorem to solve each problem. Round to the nearest tenth.

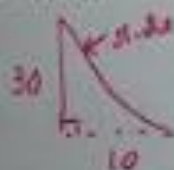
14) A 52 inch television has a length of 40 inches. How wide is the TV?



$$\begin{aligned} w^2 + 40^2 &= 52^2 \\ w^2 + 1600 &= 2704 \\ w^2 &= 1104 \\ w &= 33.22649... \end{aligned}$$

14) ≈ 33.2 inches

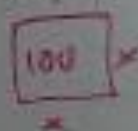
15) A building is 30 feet tall. The owner wants to put a slide from the top of the building to 10 feet from the base of the building. How long will the slide be?



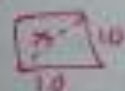
$$\begin{aligned} 10^2 + 30^2 &= c^2 \\ 100 + 900 &= c^2 \\ 1000 &= c^2 \\ 31.62277... &= c \end{aligned}$$

15) ≈ 31.6 ft

16) A square has an area of 100 ft<sup>2</sup>. What is the length of the diagonal of the square?



$$\begin{aligned} x^2 &= 100 \\ x &= 10 \end{aligned}$$



$$\begin{aligned} 10^2 + 10^2 &= c^2 \\ 100 + 100 &= c^2 \\ 200 &= c^2 \\ 14.1421 &= c \end{aligned}$$

16) ≈ 14.1 ft

### Review Problems

17) The yearbook club and the drama club have a total of 64 students. The drama club has 10 more students than the yearbook club. How many students are in each club? Write a system of equations and solve.

let  $x$  = drama students  
 $y$  = yearbook students

$$\begin{aligned} x + y &= 64 \\ x &= y + 10 \end{aligned}$$

17) 27 yearbook & 37 drama students

$$\begin{aligned} y + 10 + y &= 64 \\ 2y + 10 &= 64 \\ 2y &= 54 \\ y &= 27 \end{aligned}$$

18) Write an equation in slope-intercept form with a slope of  $-3$  and passes through the point  $(-1, 8)$ .

$$\begin{aligned} y - 8 &= -3(x + 1) \\ y - 8 &= -3x - 3 \\ +8 & \quad +8 \\ y &= -3x + 5 \end{aligned}$$

18)  $y = -3x + 5$