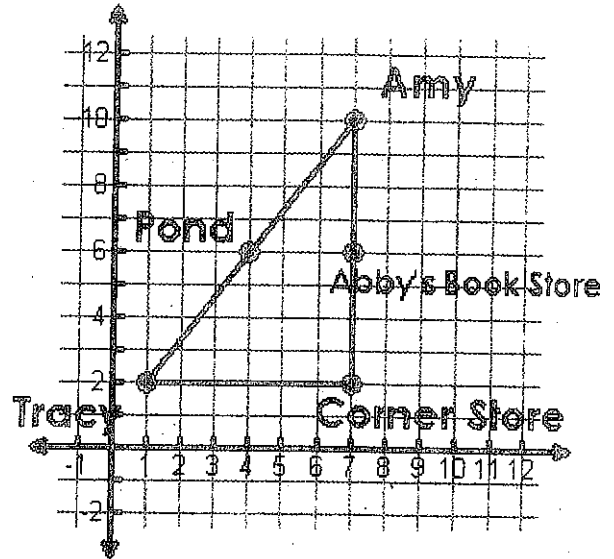


Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Pythagorean Theorem & the Distance Formula

Tracy wants to visit Amy for her birthday. She decides to walk to the Corner Store and then pass Abby's Book Store on the way in order to purchase a present. Coming home she will take the shortcut through the park and past the pond.



1. State Tracy's coordinate: \_\_\_\_\_
2. State Amy's coordinate: \_\_\_\_\_
3. State the Corner Store's coordinate: \_\_\_\_\_
4. State the Pond's coordinate: \_\_\_\_\_
5. State Abby's Book Store's coordinate: \_\_\_\_\_
6. Compute the distance from Amy's house to Tracy's house by using the distance formula.
7. If each unit on the grid represents one block, how many blocks will Tracy walk going from *her house to the Corner Store*? \_\_\_\_\_
8. If each unit on the grid represents one block, how many blocks will Tracy walk from the *Corner Store to Amy's House*? \_\_\_\_\_
9. If each unit on the grid represents one block, how many blocks is it *from Amy's house to the pond*? Use any method to solve.
10. If each unit on the grid represents one block, how many blocks is it *from Tracy's house to the pond*? Use any method to solve.
11. If each unit on the grid represents one block, how many blocks is it when Tracy walks to the Corner Store, then to Amy's house, and then back to her own house?
12. If Tracy stops at the bookstore, calls Amy, finds out she's not at home, and heads over to the pond then home. How does this compare to her walk from #11?

A surveyor must determine the distance around a triangle formed by three towns. He put a grid over the map to help him determine these measurements as shown below. The axes are labeled in **miles**. Help the surveyor find the distance between each town to determine the distance around the triangle.

13. What is the coordinate of Crazytown? \_\_\_\_\_

14. What is the coordinate of Lazytown? \_\_\_\_\_

15. What is the coordinate of Busytown? \_\_\_\_\_

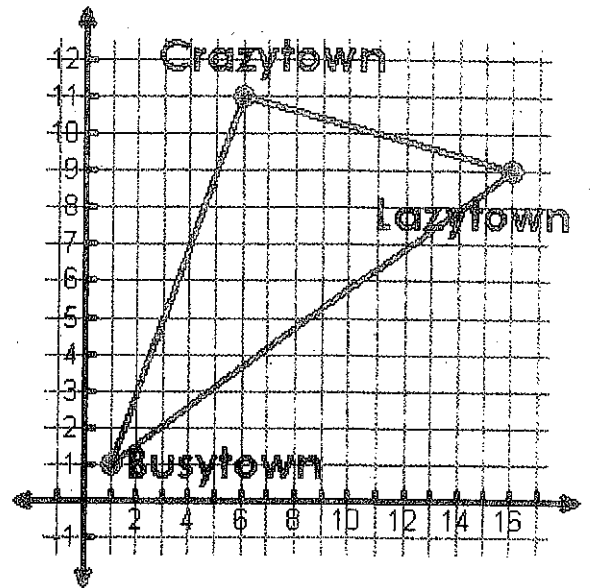
16. What is the distance between Busytown and Crazytown?

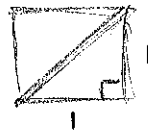
17. What is the distance between Busytown and Lazytown?

18. What is the distance between Lazytown and Crazytown?

19. What is the perimeter of the triangle?

20. Classify the triangle by the length of the sides.





Distance Formula

$$\sqrt{1^2 + 1^2} = \sqrt{c^2}$$

Name: KEY

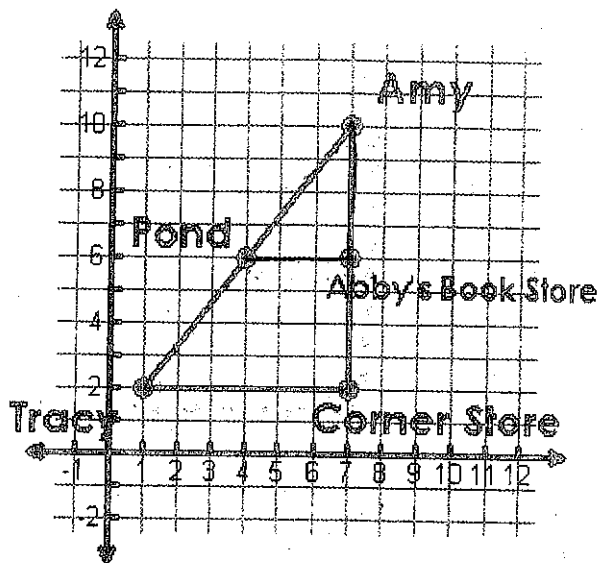
Date: \_\_\_\_\_

Pythagorean Theorem & the Distance Formula

$$\sqrt{2} = c$$

$$c \approx 1.4$$

Tracy wants to visit Amy for her birthday. She decides to walk to the Corner Store and then pass Abby's Book Store on the way in order to purchase a present. Coming home she will take the shortcut through the park and past the pond.



1. State Tracy's coordinate: (1, 2)
2. State Amy's coordinate: (7, 10)
3. State the Corner Store's coordinate: (7, 2)
4. State the Pond's coordinate: (4, 6)
5. State Abby's Book Store's coordinate: (7, 6)

6. Compute the distance from Amy's house to Tracy's house by using the distance formula.

$$\begin{aligned} & (7-1)^2 + (10-2)^2 && 36 + 64 \\ & 6^2 + 8^2 && \sqrt{100} \quad 10 \end{aligned}$$

7. If each unit on the grid represents one block, how many blocks will Tracy walk going from her house to the Corner Store? 6
8. If each unit on the grid represents one block, how many blocks will Tracy walk from the Corner Store to Amy's House? 8
9. If each unit on the grid represents one block, how many blocks is it from Amy's house to the pond? Use any method to solve.

$$\begin{aligned} & \sqrt{3^2 + 4^2} = d \\ & \sqrt{9 + 16} \quad \sqrt{25} = 5 \end{aligned}$$

10. If each unit on the grid represents one block, how many blocks is it from Tracy's house to the pond? Use any method to solve. (1, 2) (4, 6)  $3^2 + 4^2$   $\sqrt{25} = 5$
11. If each unit on the grid represents one block, how many blocks is it when Tracy walks to the Corner Store, then to Amy's house, and then back to her own house?

24

12. If Tracy stops at the bookstore, calls Amy, finds out she's not at home, and heads over to the pond then home. How does this compare to her walk from #11?

18

A surveyor must determine the distance around a triangle formed by three towns. He put a grid over the map to help him determine these measurements as shown below. The axes are labeled in **miles**. Help the surveyor find the distance between each town to determine the distance around the triangle.

13. What is the coordinate of Crazytown? (6, 11)

14. What is the coordinate of Lazytown? (16, 9)

15. What is the coordinate of Busytown? (1, 1)

16. What is the distance between Busytown and Crazytown?

$$\begin{aligned} & \sqrt{(6-1)^2 + (11-1)^2} \\ & \sqrt{5^2 + (10)^2} \\ & \sqrt{25 + 100} = 5\sqrt{5} = 11.18 \end{aligned}$$

17. What is the distance between Busytown and Lazytown?

$$\begin{aligned} & \sqrt{(1-16)^2 + (1-9)^2} \\ & \sqrt{(-15)^2 + (-8)^2} \\ & \sqrt{225 + 64} = 17 \end{aligned}$$

18. What is the distance between Lazytown and Crazytown?

$$\begin{aligned} & \sqrt{(6-16)^2 + (11-9)^2} \\ & \sqrt{(-10)^2 + (2)^2} \\ & \sqrt{100 + 4} \\ & \sqrt{104} = 2\sqrt{26} \end{aligned}$$

19. What is the perimeter of the triangle?

$$38.38$$

20. Classify the triangle by the length of the sides.

Scalene triangle

