

P.1: *Right and Obtuse Triangles*

1) What are the similarities and differences between Kaden and Maddie's methods?

Similarities	Differences

2) Kaden found that the Pythagorean Theorem didn't work for his triangle. Did he do something wrong? Explain.

3) How did Maddie know the Pythagorean Theorem worked for her triangle?

4) Kaden's sister says that side lengths of 5, 7, and 11 form a right triangle. Is she correct? How do you know?

P.2: *Missing Side Length*

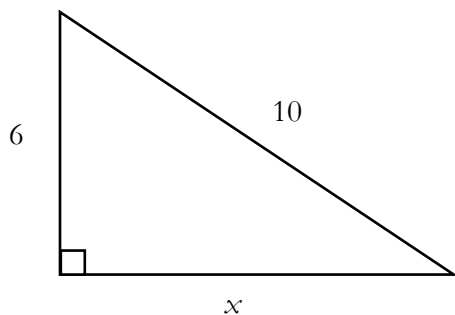
1) What are the similarities and differences between Kaden and Maddie's methods?

Similarities	Differences

2) Kaden and Maddie got different answers. Can they both be correct? If not, who is correct, and how do you know?

3) Does it matter that Maddie used 9 for  $a$  and 12 for  $b$ ? Why, or why not?

4) Find the missing side of the right triangle in the diagram.



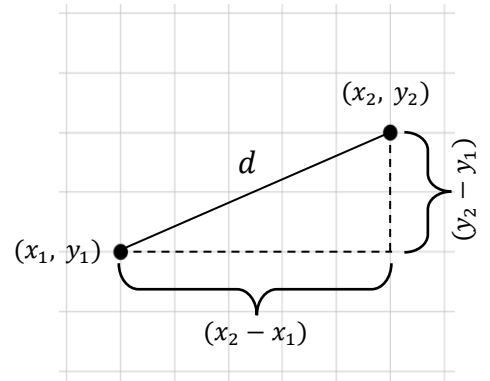
P.3: *Connections to Distance Formula*

1) What are the similarities and differences between Kaden and Maddie's methods?

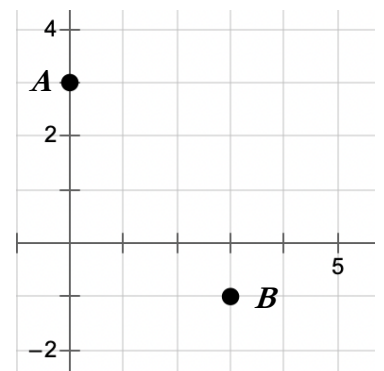
Similarities	Differences

2) Why did Kaden and Maddie get the same answer for the distance between  $(2, 1)$  and  $(8, 9)$  when they used different methods?

3) Maddie thinks  $(x_2 - x_1)$  can be substituted for  $a$  and  $(y_2 - y_1)$  can be substituted for  $b$  in the Pythagorean Theorem. Do you agree or disagree? Explain.



4) Use both the distance formula and the Pythagorean Theorem to find the distance between  $A(0, 3)$  and  $B(3, -1)$ .



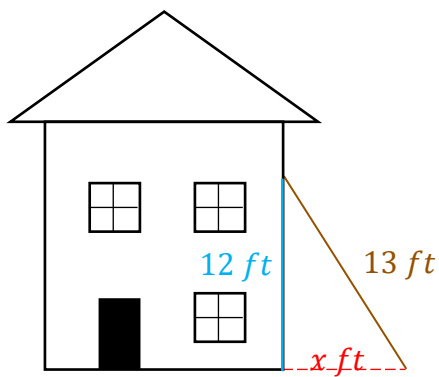
P.4: Ladder Application

1) What are the similarities and differences between Kaden and Maddie's methods?

Similarities	Differences

2) Maddie and Kaden got different answers. Who is correct, and why?

3) Find the missing side length.



4) Kaden's friend, Natasha, says that it doesn't really matter which sides of a right triangle are  $a$ ,  $b$ , and  $c$ , as long as you use all of the numbers. Is she correct? Explain your thinking.

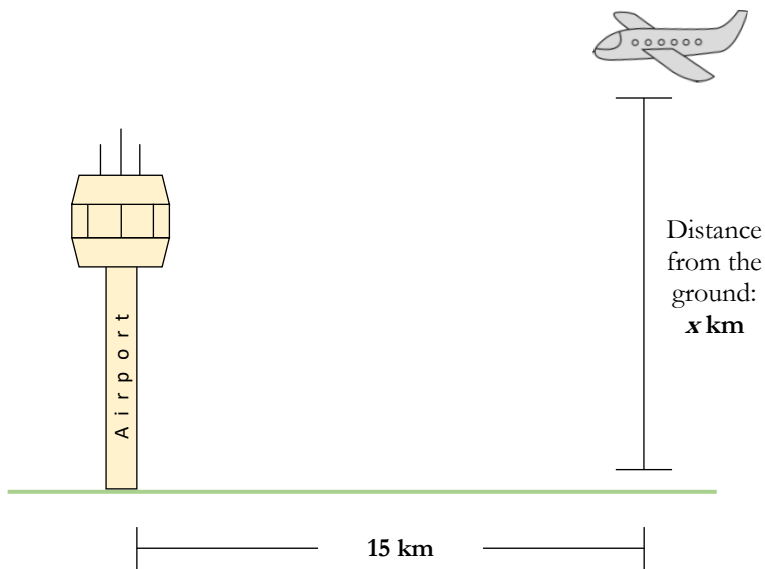
P.5: Plane Application

1) What are the similarities and differences between Kaden and Maddie's methods?

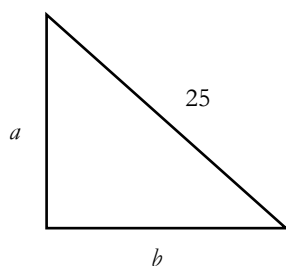
Similarities	Differences

2) Whose method would you rather use? Explain why you chose that method.

3) A plane is 22 km from the base of the airport tower. Determine the distance from the plane to the ground.



4) Given the triangle below, is it possible to find more than one set of lengths for sides  $a$  and  $b$ ? Explain.



P.6: *Pythagorean Triples*

1) What are the similarities and differences between Kaden and Maddie's methods?

Similarities	Differences

2) Do the side lengths 11, 14, and 17 form a Pythagorean triple? Show your work.

3) If you know that 3 numbers do not form a Pythagorean triple, what do you know about the triangle formed by those three side lengths?

4) In your own words, write a definition for a Pythagorean triple.