Distances in the Coordinate Plane
Student Activity

Name _____

Class _____

Problem 1 – The Distance Formula

1. Open up a new document in the Cabri Jr. app. Construct a segment. Find the coordinates of the endpoints and the measured length. Use the distance formula to calculate the length.

Endpoints	Measured Length	Calculated Length
(_____, _____) and (_____, _____)	_____	_____
(_____, _____) and (_____, _____)	_____	_____

2. What is important to remember when using the distance formula?

3. What happens to the distance formula when your segment is horizontal or vertical? Give an example using endpoints.

(_____, _____) and (_____, _____)

Problem 2 – The Distance Formula and the Pythagorean Theorem

4. Find the length of all three sides of your triangle. Which side is the longest? Can two of the sides be equal lengths? Which two?

5. Use the Pythagorean Theorem to calculate the length of your segment in another way.

Endpoints	Measured Length	Pythagorean Length
(_____, _____) and (_____, _____)	_____	_____
(_____, _____) and (_____, _____)	_____	_____

6. What is the relationship between the Pythagorean Theorem and the distance formula?

Exercises

7. What formula gives the distance between the points (x_1, y_1) and (x_2, y_2)?

Determine the length of the segment with the following endpoints:

8. (1, 2) and (5, 10)

9. (5, 8) and (9, 5)

10. (7, 4) and (4, 7)

11. (–2, 3) and (3, 5)

12. (1, –9) and (–2, –7)

13. (3, 5) and (3, –11)

Given an endpoint and a length of a segment, find a possible other endpoint:

14. Endpoint: (3, 1); Length 5