


Points on a Line

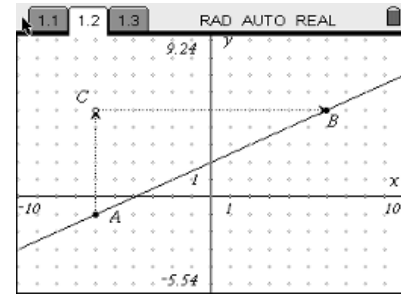
STUDENT WORKSHEET

Directions for manipulating this AC document

- Drag point A along the line
- Drag point B along the line

Additional instructions about the file.

- Press  to advance to the next page in the AC Doc



Part 1

Open the TI-Nspire document *Points on a Line AC* document. Move to page 1.2 of the *tns* file.

- 1) What happens as you move point A? Point B?

- 2) Describe the position of point C as you move point A? Point B?

Part 2

- 3) a) As you view the graph, how could you get from point A to point C? From point C to point B?

- b) Move point A. Now, how could you get from point A to point C? From point C to point B?

- c) Describe the relationship between the number of units & direction from A to C and the number of units & direction from C to B.

- 4) a) If you had to move up 6 units to get from point A to point C, how many units, and in what direction, must you move to get from point C to point B?

- b) Make a conjecture about the relationship between the number of units and direction from A to C and C to B. Choose some new points for A and B and verify your conjecture.

- 5) Look at your plot. What is the vertical change from point A to point B? What is the horizontal change? Explain how you found your answers.
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- 6) Find the ratio of Vertical Change to Horizontal Change for several pairs of points on the line. What do you observe about the ratios?
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Part 3

- 7) **a) Move** to page 1.3 in the AC document. Record the information in row 1 of the table below.
b) Find the missing values for points A and B on the line. Explain your reasoning.

	Coordinates of Point A	Coordinates of Point B	$\frac{\text{Vertical Change (A to C)}}{\text{Horizontal Change (C to B)}}$
1	(-8 ,)	(, 5)	
2	(-6 ,)	(,)	$\frac{2}{4}$
3	(, 3)	(,)	$\frac{3}{6}$
4	(2 ,)	(,)	$\frac{-4}{-8}$

- 8) Describe how the information in the table in #7 relates to your observations in question #6.
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- 9) What happens when point A is to the right of point B?
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Part 4

- 10) Suppose points A and B are on the line, but not displayed in the window of the document. If the vertical change from point A to point B is 50 what is the horizontal change?
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- 11) For a different line, the coordinates of point A are (-3 , -4) and the ratio of the vertical change to the horizontal change is $\frac{2}{3}$. Find the coordinates of point B. Explain your reasoning.
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- 12) Describe the line if the movement from point A to Point B is described as “down 4 and right two.” Make a sketch to show your thinking.
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