

Warm Up

1.) What must you do to construct the midpoint of a segment?

(A) Measure half its length.

(C) Measure twice its length.

(B) Construct an angle bisector.

(D) Construct a perpendicular bisector.

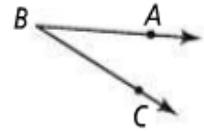
2.) Given the diagram at the right, what is NOT a reasonable name for the angle?

(F) $\angle ABC$

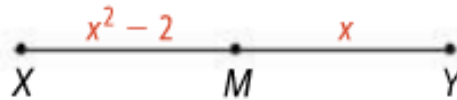
(H) $\angle CBA$

(G) $\angle B$

(I) $\angle ACB$



3.) M is the midpoint of \overline{XY} . Find the value of x . Show your work.



1-7: Midpoint and Distance in the Coordinate Plane

Obj - SWBAT find the midpoint of a segment and the distance between two points in the coordinate plane.

Take note

Key Concept Midpoint Formulas

Description

On a Number Line

The coordinate of the midpoint is the *average* or *mean* of the coordinates of the endpoints.

In the Coordinate Plane

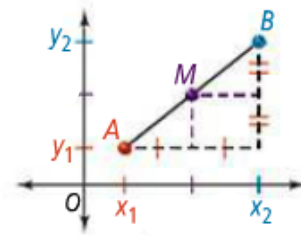
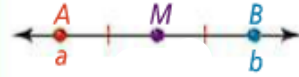
The coordinates of the midpoint are the average of the x -coordinates and the average of the y -coordinates of the endpoints.

Formula

The coordinate of the midpoint M of \overline{AB} is

Given \overline{AB} where $A(x_1, y_1)$ and $B(x_2, y_2)$, the coordinates of the midpoint of \overline{AB} are $M(\quad , \quad)$.

Diagram



Ex. 1: \overline{JK} has endpoints at -12 and 4 on a number line. What is the coordinate of its midpoint?

Ex. 2: What is the midpoint of \overline{RS} with endpoints $R(5, -10)$ and $S(3, 6)$?

Ex. 3: The midpoint of \overline{AB} has coordinates $(4, -9)$. Endpoint A has coordinates $(-3, -5)$. What are the coordinates of B ?

homework

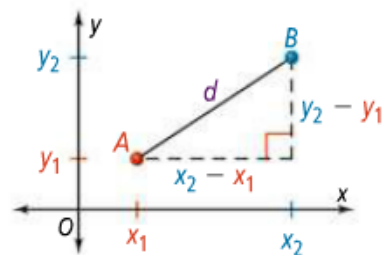
pg. 54 #6-9, 11-21
odd

take note

Key Concept Distance Formula

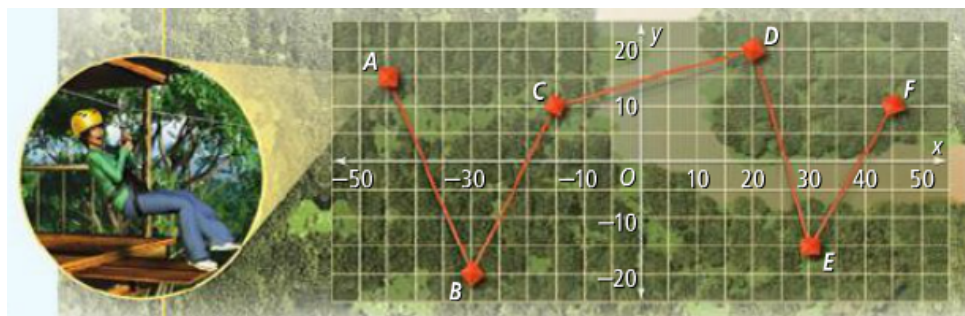
The distance between two points $A(x_1, y_1)$ and $B(x_2, y_2)$ is

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



Ex. 4: \overline{SR} has endpoints $S(-2, 14)$ and $R(3, -1)$. What is SR to the nearest tenth?

Ex. 5: On a zip-line course, you are harnessed to a cable that travels through the treetops. You start at Platform A and zip to each of the other platforms. How far do you travel from Platform D to Platform E? Each grid unit represents 5 m.



homework

pg. 54-55 #23-27 odd,
31, 36-38, 48, 49