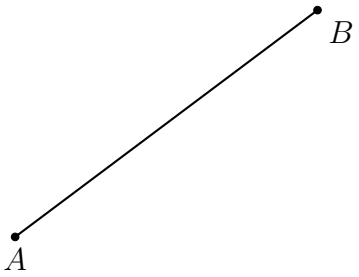
BECA/Huson/Geometry: Congruence
17 October 2024

First and last name:
Section:

**2.3 Classwork: Segment lengths**

1. Use symbols to write the names of objects in the given figure.



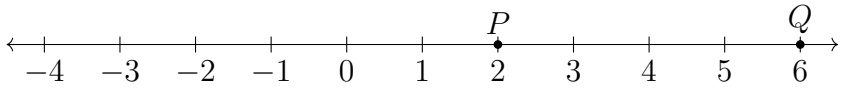

(a) The two endpoints

(b) The name of the line segment

(c) Measure the segment. Write its length in centimeters (expressed as an equation).

2. A(n) _____ is a portion of a straight line that includes two points and all of the points between the two points.

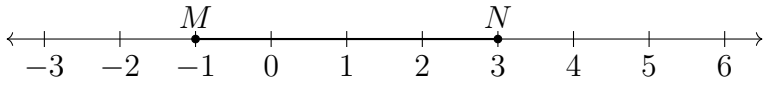
3. Given $\overline{PQ}$ as shown on the number line.




What is the distance between $P$ and $Q$?

$PQ =$

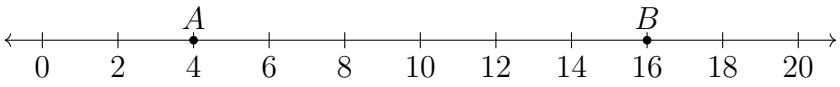
4. Two points $M(-1)$, $N(3)$ and the segment $\overline{MN}$ are shown on the number line.



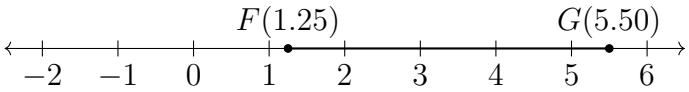

What is the length of the segment $\overline{MN}$? Show your work as an equation.

5. Can a length be a negative number? Can it be zero?

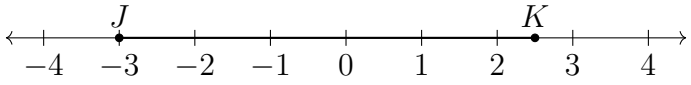
6. Points $A = 4$ and $B = 16$ are shown below. Find $AB$.




7. Given $\overline{FG}$ as shown. What is the distance on the number line between the points?




8. Given $J(-3.0)$ and $K(2.5)$, as shown on the number line. Find the length of the line segment $\overline{JK}$.




9. Terry is 63 inches tall and Steven is 68 inches tall. State who is taller and by how much.

10. Dr. Huson bicycles from 80th Street to 164th Street (straight north). How many blocks is that?

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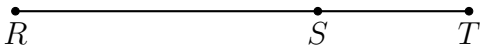
11. Given $\overline{RST}$, $RS = 5$, and $RT = 7\frac{1}{2}$. Find $ST$.




12. Given $\overline{DEF}$, $DE = x + 4$, $EF = x + 2$, $DF = 14$. Find $DE$.

(a) Label the diagram with the given values.


(b) Write an equation:

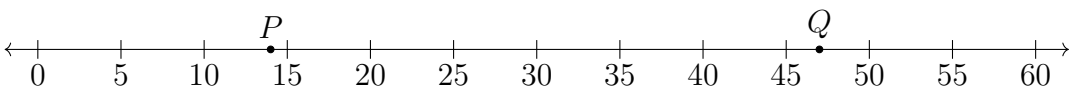
(c) Solve for $x$

(d) Answer the question.

Find $DE$ by substituting for $x$.

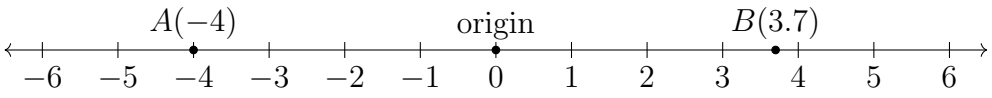
(e) Check your answer

13. Points $P = 14$ and $Q = 47$ are shown below. Find $PQ$.



### 2.3 Extension: Absolute value

14. Write down the distance of each point from the origin. Use absolute value notation.




A. $|-4| =$ B. _____

15. Find the value of each expression.

(a) $|-3| =$

(b) $|5| =$

(c) $|-2.75| =$

(d) $|11-3| =$

(e) $|3-11| =$

(f) $|5+(-7)| =$

16. Circle true or false for each statement.

**T** **F** The absolute value of any number must be postive or zero.

**T** **F** In the equation $|x| = 4$ the value of $x$ could be positive 4.

**T** **F** If $x = -5$ then $|x| = 5$.

**T** **F** The following equation is never true for any $x$: $|x| = -10$.

17. Given that $x = -5$, find the value of each expression.

(a) $|x+2| =$

(b) $|-x| =$

(c) $|2x| =$

(d) $|6-x| =$