

Quiz 1

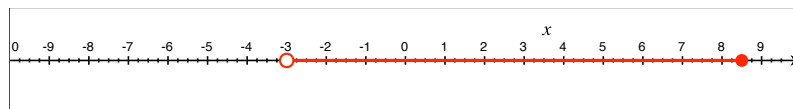
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Show all work to support your solution. Be sure to check your solutions.

1. Consider the set $S := \left\{ x \in \mathbb{R} : -3 < x \leq \frac{17}{2} \right\}$.

(a) (2 Points) What is this the interval notation for this set? $\left(-3, \frac{17}{2}\right]$

(b) (2 Points) Illustrate this set on the number line provided.



(c) (2 Points) What is the length of this interval? That is, what is the distance between its endpoints?

$$d\left(-3, \frac{17}{2}\right) = \left| -3 - \frac{17}{2} \right| = \left| \frac{-6}{2} - \frac{17}{2} \right| = \left| \frac{-23}{2} \right| = \frac{23}{2}$$

2. Perform the following computations

(a) (2 Points)

$$3 \cdot 2 - 4 \cdot 2^2 + 6(3 - 1)$$

$$= 3 \cdot 2 - 4 \cdot 2^2 + 6(2) = 3 \cdot 2 - 4 \cdot 4 + 6(2) = 6 - 16 + 12 = 2$$

(b) (2 Points)

$$\frac{4(8 - 6)^2 - 4 \cdot 3 + 2 \cdot 8}{3^1 + 19^0}$$

$$= \frac{4(2)^2 - 4 \cdot 3 + 2 \cdot 8}{3^1 + 19^0} = \frac{4(4) - 4 \cdot 3 + 2 \cdot 8}{3 + 1} = \frac{16 - 12 + 16}{3 + 1} = \frac{20}{4} = 5$$