

Applied Algebra 2.1

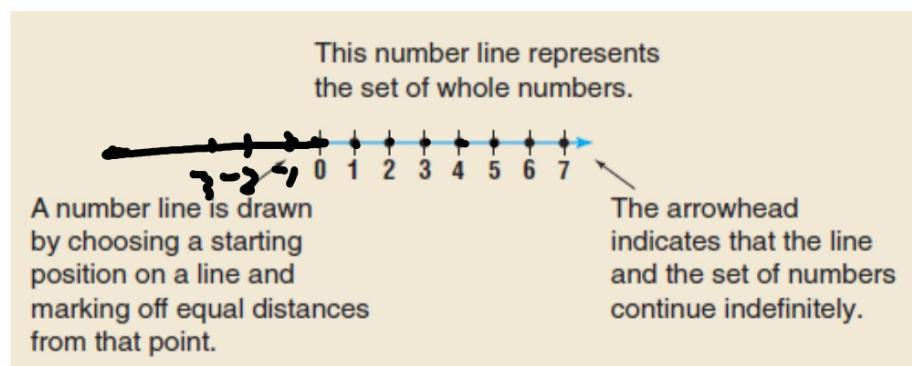
Graph integers on a number line

Compare integers

Order integers

number line
positive number
zero
negative number
integer
whole number
natural number
graph
coordinate
absolute value
order of operations

$-\frac{1}{2}$ 3.5 -12



activity: cards compare

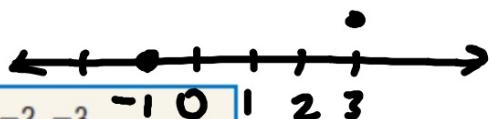
Integers

Words: Integers are the negative numbers $-1, -2, -3, -4, \dots$ and whole numbers $0, 1, 2, 3, 4, \dots$

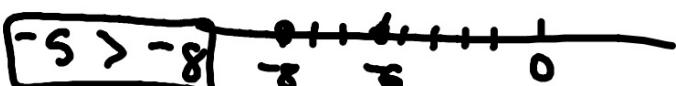
Symbols: $\{\dots, -4, -3, -2, -1, 0, 1, 2, 3, 4, \dots\}$

Model:

A horizontal number line with tick marks every 1 unit, labeled from -4 to +4. Red dots are placed at -4 and +2. A black dot is placed at 0. Above the line, a double-headed arrow spans from -4 to 0 and is labeled "negative". Another double-headed arrow spans from 0 to +4 and is labeled "positive".



Zero is neither negative nor positive.



Replace each \bullet with $<$ or $>$ to make a true sentence.

(Examples 3 & 4)

$$12. -8 \bullet -5$$

$$13. -4 \bullet 2$$

$$14. 9 \bullet -7$$

Evaluate each expression. (Examples 6 & 7)

$$15. |-8| + |-2|$$

$$\downarrow \quad \downarrow \\ 8 + 2 = 10$$

$$16. |-7| - |4|$$

$$\downarrow \quad \downarrow \\ 7 - 4 = 3$$

- 17. Meteorology** The table gives the record low temperatures for each month at the Grand Canyon Airport in Arizona. Order the temperatures from least to greatest. *(Example 5)*

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°F)	-22	-17	-7	9	10	26	35	35	22	13	-1	-14

Source: *The Weather Almanac*

*-22, -17, -14, -7, -1, 9, 10, 13
22, 26, 35, 35-*

Replace each ● with < or > to make a true sentence.

$$30. 4 \textcolor{red}{>} -4$$

$$33. 2 \textcolor{red}{>} -3$$

$$36. -5 \bullet |-5|$$

$$-5 < 5$$

$$31. 0 \textcolor{red}{>} -2$$

$$34. -10 \textcolor{red}{<} 1$$

$$37. |4| \bullet -4$$

$$4 > -4$$

$$32. -2 \textcolor{red}{<} -1$$

$$35. -15 \bullet -10$$

$$38. |-6| \bullet |-3|$$

$$6 > 3$$

$$|0| = 0$$

Evaluate each expression.

$$39. |-6| = 6$$

$$42. |-7| + |-2|$$

$$\begin{array}{r} \downarrow \\ 7 + 2 \\ 9 \end{array}$$

$$40. |10| = 10$$

$$43. |14| - |-5|$$

$$\begin{array}{r} 14 - 5 \\ \quad\quad\quad 9 \end{array}$$

$$5 - 3 = 2$$

$$41. |-5| - |3|$$

$$44. |-13| + |-17|$$

$$\begin{array}{r} 13 + 17 \\ \quad\quad\quad 30 \end{array}$$