

Inequalities

What do you remember?



$$\begin{array}{r} x + 3 < -2 \\ - 3 \quad -3 \\ \hline x < -5 \end{array}$$

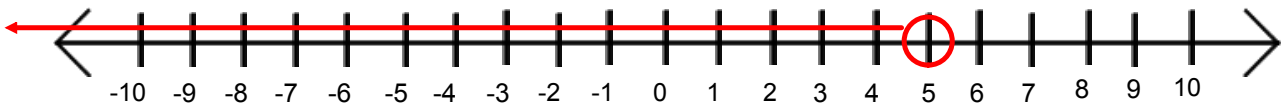


$$x + 4 < 9$$

$$- 4$$

$$- 4$$

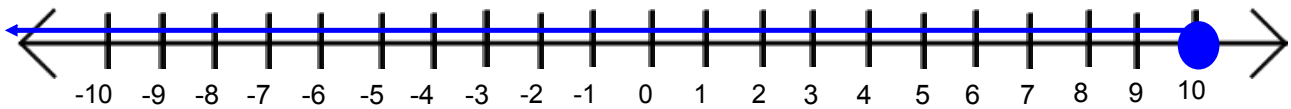
$$x < 5$$



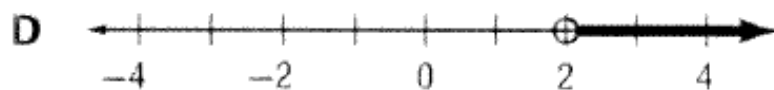
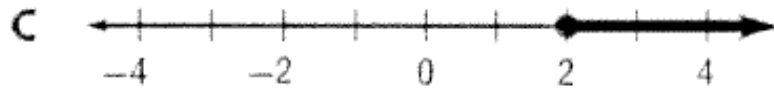
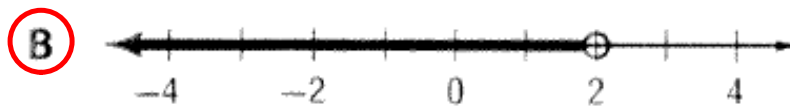
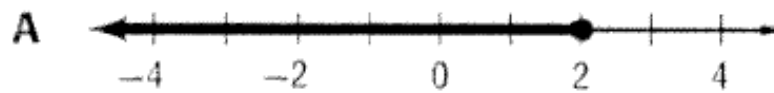
$$\frac{4s}{4} > \frac{20}{4}$$
$$s > 5$$



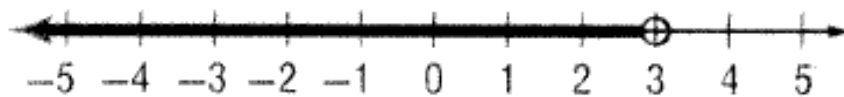
$$\frac{k}{5} \leq 2$$
$$k \leq 10$$



1 Which is the graph of the solution of $2x < 4$?



- 6 Which inequality has the solution set shown on the graph below?



- F** $6 + m < 9$ **H** $6m < 9$
G $6 - m < 9$ **J** $\frac{m}{6} < 9$

4 Which sentence shows the first step in solving the inequality $4s > 20$?

F $\frac{4s}{4} > 20$

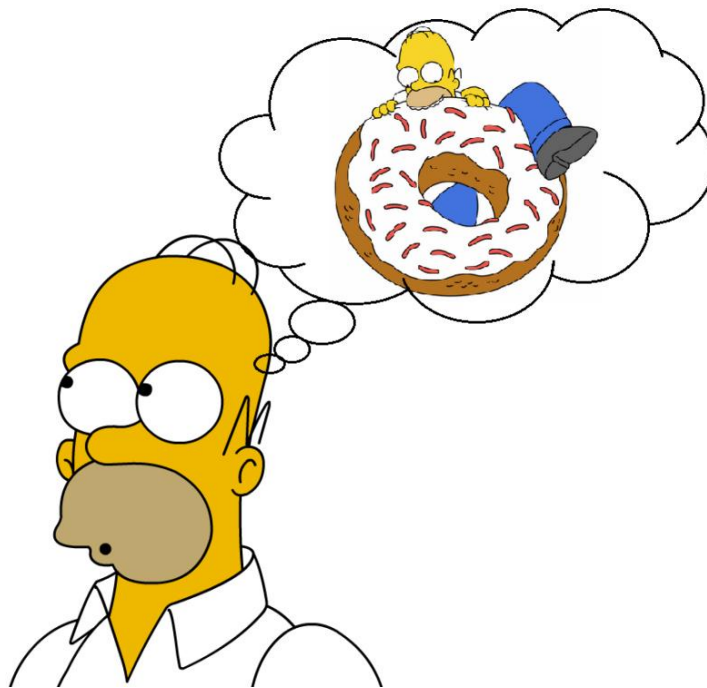
G $4s - 4 > 20 - 4$

H $\frac{4s}{4} > \frac{20}{4}$

J $4s - 4 > \frac{20}{4}$

Properties

What are the 4 properties that we have learned about?



Commutative

$$14 + 5 + 9 = 14 + 9 + 5$$

Associative

$$(9 \times 2) \times 5 = 9 \times (2 \times 5)$$

Distributive

$$5(3 - 2) = 5 \times 3 - 5 \times 2$$

Additive Identity

$$7 + 0 = 7$$

- 6** Chris bought three new sweaters for \$57, \$28, and \$43. Using mental math to add the costs, Chris thought this.

$$57 + 28 + 43 = 57 + 43 + 28$$

Which property did Chris use?

- F Associative property of addition
- G Additive inverse property
- H Commutative property of addition
- J Distributive property

- 7 Which property is used in the equation below?

$$\left(7 + \frac{2}{3}\right) + 0 = \left(7 + \frac{2}{3}\right)$$

- A Additive identity property
- B Multiplicative identity property
- C Additive inverse property
- D Multiplicative inverse property

4 Which number sentence shows the commutative property of multiplication?

F $(5 \cdot 4) \cdot 2 = 5 \cdot (4 \cdot 2)$

G $(5 \cdot 4) \cdot 2 = (4 \cdot 5) \cdot 2$

H $(5 + 4) \cdot 2 = (5 \cdot 2) + (4 \cdot 2)$

J $(5 \cdot 2) \cdot 4 = 5 \cdot (2 \cdot 4)$

8 Which equation demonstrates the associative property of multiplication?

F $\frac{3}{7} \cdot \left(\frac{2}{3} + \frac{4}{5}\right) = \frac{3}{7} \cdot \frac{2}{3} + \frac{3}{7} \cdot \frac{4}{5}$

G $\frac{3}{7} \cdot \left(\frac{2}{3} \cdot \frac{4}{5}\right) = \frac{3}{7} \cdot \left(\frac{4}{5} \cdot \frac{2}{3}\right)$

H $\frac{3}{7} \cdot \left(\frac{2}{3} \cdot \frac{4}{5}\right) = \left(\frac{3}{7} \cdot \frac{2}{3}\right) \cdot \frac{4}{5}$

J $\frac{3}{7} \cdot \left(\frac{2}{3} + \frac{4}{5}\right) = \left(\frac{2}{3} + \frac{4}{5}\right) \cdot \frac{3}{7}$

13 Which equation illustrates the distributive property?

A $(9 \cdot 2) \cdot 5 = 9 \cdot (2 \cdot 5)$

B $9 \cdot (2 + 5) = 9 \cdot (5 + 2)$

C $9 \cdot (2 + 5) = 9 \cdot 2 + 9 \cdot 5$

D $9 + (2 \cdot 5) = 9 + (5 \cdot 2)$

