Quiz: Linear Inequality

Section:Linear Inequality

Sub-section: Inequality, Linear Inequalities with one Variable and Solving Inequalities in One Variable

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Choose the correct answer.

1. Fill in the blank with the correct symbol.

   $3 + 2 \square 2 \times 3$

   (understand, MA 1.3 G.9/1)

   A. $=$ B. $>$ C. $\geq$ D. $<$

   Solution $<$

   $3 + 2 < 2 \times 3$, because $3 + 2 = 5$ and $2 \times 3 = 6$

2. Fill in the blank with the correct symbol.

   $10 - 5 \square 10 \div 5$

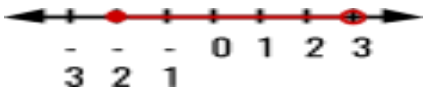
   (understand, MA 1.3 G.9/1)

   A. $=$ B. $>$ C. $\leq$ D. $<$

   Solution $>$

   $10 - 5 > 10 \div 5$, because $10 - 5 = 5$ and $10 \div 5 = 2$

3. Choose the inequality that represents the following graph.



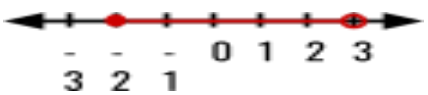
   (understand, MA 1.3 G.9/1)

   A. $-2 < x < 3$ B. $x < -2 \; or \; x > 3$

   C. $-2 \leq x < 3$ D. $-2 \leq x \leq 3$

   Solution $-2 \leq x < 3$

   $-2 \leq x < 3$, because x is greater than or equal to -2 and less than 3 that represents the following graph.



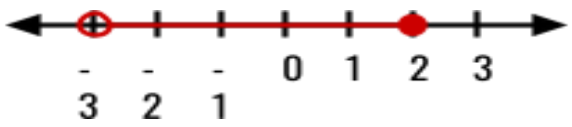
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4. Choose the inequality that represents the following graph.



(understand, MA 1.3 G.9/1)

A. $-3 < x < 2$

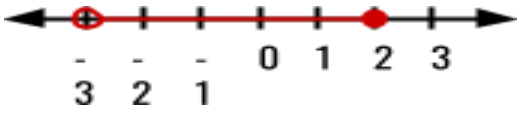
B. $x < -3 \; or \; x > 2$

C. $-3 \leq x < 2$

D. $-3 < x \leq 2$

Solution $-3 < x \leq 2$

$-3 < x \leq 2$, because x is greater than -3 and less than or equal to 2 that represents the following graph.



5. Which of the following must be false. (understand, MA 1.3 G.9/1)

A. $8 + 5 \leq 9 + 5$

B. $(-2) \times 3 > (-3) \times 3$

C. $6 \times (-1) \geq 4 \times (-1)$

D. $4 \div (-2) \geq 8 \div (-2)$

Solution $6 \times (-1) \geq 4 \times (-1)$

$8 + 5 \leq 9 + 5$ true, because $8 \leq 9$ and use an addition properties by 5

$(-2) \times 3 > (-3) \times 3$ true, because $(-2) > (-3)$ and use a multiplication properties by 3

$6 \times (-1) \geq 4 \times (-1)$ false, because $6 \geq 4$ and use a multiplication properties by -1, so that $6 \times (-1) \leq 4 \times (-1)$

$4 \div (-2) \geq 8 \div (-2)$ true, because $4 \leq 8$ and use a division properties by -2

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6. Which of the following must be false. (understand, MA 1.3 G.9/1)

   A. $5 - 3 \leq 7 - 3$

   B. $(-4) \div (-1) > (-6) \div (-1)$

   C. $6 \times (-3) \leq 4 \times (-3)$

   D. $5 \div (-5) \geq 10 \div (-5)$

   Solution $(-4) \div (-1) > (-6) \div (-1)$

   $5 - 3 \leq 7 - 3$ true, because $5 \leq 7$ and use a subtraction properties by 3

   $(-4) \div (-1) > (-6) \div (-1)$ false, because $(-4) > (-6)$ and use a division properties by -1,so that $(-4) \div (-1) < (-6) \div (-1)$

   $6 \times (-3) \leq 4 \times (-3)$ false, because $6 \geq 4$ and use a multiplication properties by –3

   $5 \div (-5) \geq 10 \div (-5)$ true, because $5 \leq 10$ and use a division properties by -5

7. Solve for x.

   $-4x - 9 \leq 7$

   (understand, MA 1.3 G.9/1)

   A. $x \leq 4$

   B. $x \leq -4$

   C. $x \geq 4$

   D. $x \geq -4$

   Solution $x \geq -4$

   $x \geq -4$, because $-4x - 9 \leq 7$

   $-4x \leq 7 + 9$

   $-4x \leq 16$

   $x \geq \frac{16}{-4}$

   $x \geq -4$

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8. Solve for p.

   $13 - 3p \leq -8$

   (understand, MA 1.3 G.9/1)

   A. $p \geq 7$

   B. $p \geq -7$

   C. $p \leq 7$

   D. $p \leq -7$

   Solution $p \geq 7$

   $p \geq 7$, because $13 - 3p \leq -8$

   $-3p \leq -8 - 13$

   $-3p \leq -21$

   $p \geq \frac{-21}{-3}$

   $p \geq 7$

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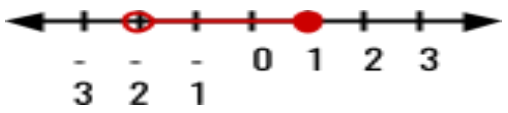
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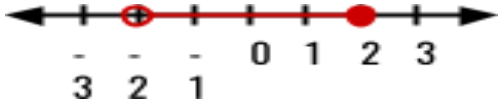
Sub-section: Inequality, Linear Inequalities with one Variable and Solving Inequalities in One Variable

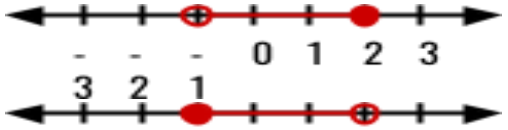
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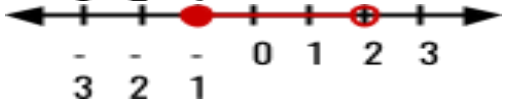
9. Graph the following inequalities. (understand, MA 1.3 G.9/1)

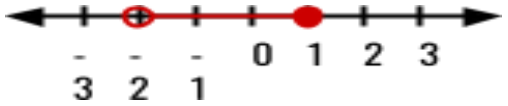
$3 \leq 9 - 6y < 21$

A. 

B. 

C. 

D. 

Solution 

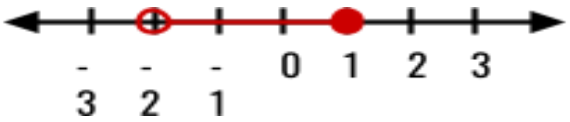
$3 \leq 9 - 6y < 21$

$3 - 9 \leq - 6y < 21 - 9$

$- 6 \leq - 6y < 12$

$1 \geq y > - 2$

$- 2 < y \leq 1$



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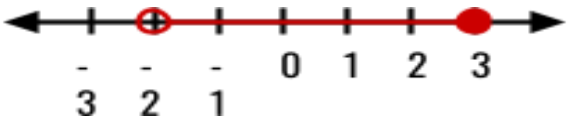
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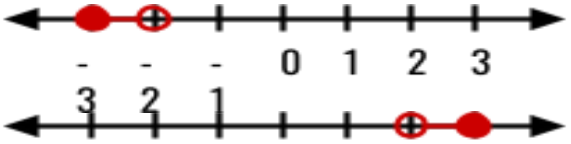
10. Graph the following inequalities. (understand, MA 1.3 G.9/1)

$15 <- 4k + 7 \leq 19$

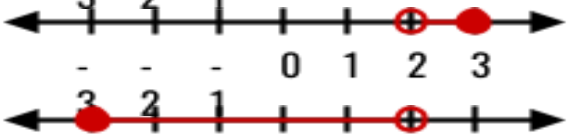
A.



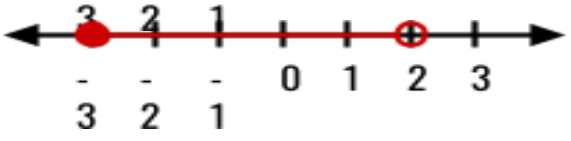
B.



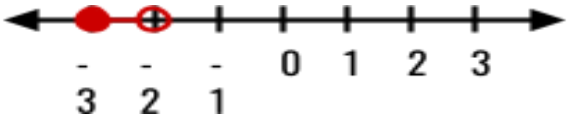
C.



D.



Solution



$15 <- 4k + 7 \leq 19$

$15 - 7 \leq - 4k < 19 - 7$

$8 \leq - 4k < 12$

$- 2 > k \geq - 3$

$- 3 \leq k <- 2$

