Chapter 6 Review

March 2, 2018 2:59 PM

Chapter 6 Review

Math 9 Chapter 6 – Review

Name_____

1. Solve each equation and verify the solution.

a. $32.3 = m - 6.9$

$+6.9 \quad +6.9$

$39.2 = m$

b. $b + 19 = 12$

$-19 \quad -19$

$b = -7$

c. $-76.05 = -9b$

$\div -9 \quad \div -9$

$b = 8.45$

d. $\frac{w}{-4} = 9$

$\frac{w}{-4} = \frac{-36}{-4}$

$w = -36$

2. Solve each equation and verify the solution.

a. $-5x - 7 = -2$

$+7 \quad +7$

$-5x = 5$

$\div -5 \quad \div -5$

$x = -1$

b. $\frac{m}{2} + 12 = 15$

$-12 \quad -12$

$\frac{m}{2} = 3$

$\frac{m}{2} = \frac{6}{2}$

$m = 6$

3. Solve each equation and verify the solution.

a. $-3(x - 2) = 15$

$-3x + 6 = 15$

$-6 \quad -6$

$-3x = 9$

$\div -3 \quad \div -3$

$x = -3$

b. $4\left(\frac{x}{5} - 1\right) = 7$

$\frac{4x}{5} - 4 = 7$

$+4 \quad +4$

$\frac{4x}{5} = 11$

$\frac{4x}{5} = \frac{55}{5}$

$4x = 55$

$\div 4 \quad \div 4$

$x = \frac{55}{4}$

4. Solve each equation, and verify the solution.

a. $4x + 3 = 2x - 5$

$-2x \quad -2x$

$2x + 3 = -5$

$-3 \quad -3$

$2x = -8$

$\div 2 \quad \div 2$

$x = -4$

b. $3.9 - 2.7y = 5.1 - 0.9y$

$+2.7y \quad +2.7y$

$3.9 = 5.1 + 1.8y$

$-5.1 \quad -5.1$

$-1.2 = 1.8y$

$\div 1.8 \quad \div 1.8$

$-\frac{2}{3} = y$

c. $-3(x + 1) = 4(2x - 9)$

$-3x - 3 = 8x - 36$

$+3x \quad +3x$

$-3 = 11x - 36$

$+36 \quad +36$

$33 = 11x$

$\div 11 \quad \div 11$

$3 = x$

d. $2(t - 8) = 4(2t - 19)$

$2t - 16 = 8t - 76$

$-2t \quad -2t$

$-16 = 6t - 76$

$+76 \quad +76$

$60 = 6t$

$\div 6 \quad \div 6$

$10 = t$

e. $-\frac{1}{3} + 2m = -\frac{1}{5}$

$-\frac{5}{15} + \frac{30m}{15} = \frac{-3}{15}$

$-5 + 30m = -3$

$+5 \quad +5$

$30m = 2$

$\div 30 \quad \div 30$

$m = \frac{2}{30} = \frac{1}{15}$

f. $\frac{3}{2}x + \frac{4}{3}x = \frac{5}{8}x + \frac{5}{2}$

$\times 12 \quad \times 8 \quad \times 3 \quad \times 12$

$\frac{36}{24}x + \frac{32}{24} = \frac{15x}{24} + \frac{60}{24}$

$36x + 32 = 15x + 60$

$-15x \quad -15x$

$21x + 32 = 60$

$-32 \quad -32$

$21x = 28$

$\div 21 \quad \div 21$

$x = \frac{28}{21}$

$x = \frac{4}{3}$

5. For each statement below, write then solve an equation to determine the number.

a. A number divided by negative four is three.

$\frac{x}{-4} = 3 \rightarrow \frac{x}{-4} = \frac{-12}{-4} \rightarrow x = -12$

b. Five less than three times a number is seven.

$3x - 5 = 7 \rightarrow 3x - 5 = 7$

$+5 \quad +5 \rightarrow 3x = 12$

$\div 3 \quad \div 3 \quad x = 4$

c. Fifteen more than twice a number is six more than five times the number.

$2x + 15 = 5x + 6$

$2x + 15 = 5x + 6$

$-2x \quad -2x$

$15 = 3x + 6$

$-6 \quad -6$

$9 = 3x$

$\div 3 \quad \div 3$

$3 = x$

6. State 3 values of the variable that satisfy each inequality.

a. $c < 7$ 0, 1, 2

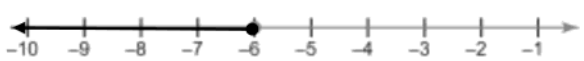
b. $a \geq -3$ 0, 1, 2

c. $5 < n$ 6, 7, 8

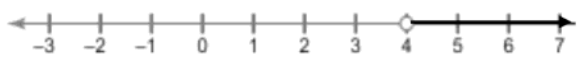
d. $-1 \geq y$ -2, -3, -4

7. Write the inequality that is graphed on each number line.

a. $x \leq -6$



b. $x > 4$

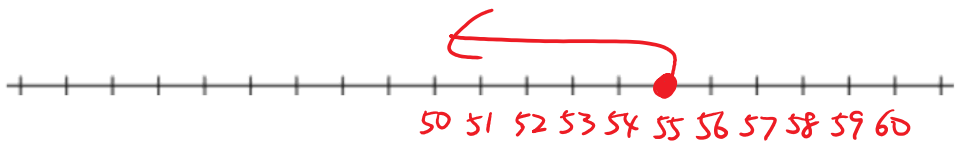


c. $x < 7.5$

d. $x \geq -12$

8. Write an inequality to describe each situation, then graph it.

a. The gas tank in a car contains no more than 55 L of gas. $x \leq 55$

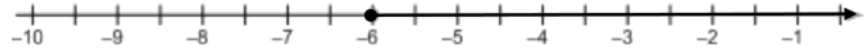


b. The minimum age you must be to watch the movie is 13. $x \geq 13$

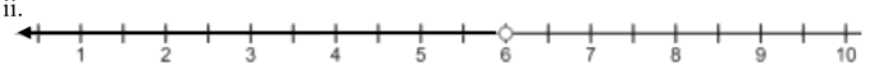
$g < 6$ $7 \geq m$ $y \geq -6$ $-4 < f$

9. Match each inequality with the graph of its solution.

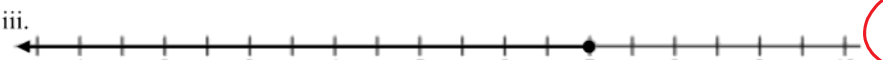
a. $g + 3 < 9$ (−3 −3) b. $5 \geq m - 2$ (+2 +2) c. $2 + y \geq -4$ (−2 −2) d. $-1 < f + 3$ (−3 −3)

i. 

c

ii. 

a

iii. 

b

iv. 

d

10. Solve, then graph each inequality.

a. $7t - 4 > 3t + 12$

$-3t \quad -3t$

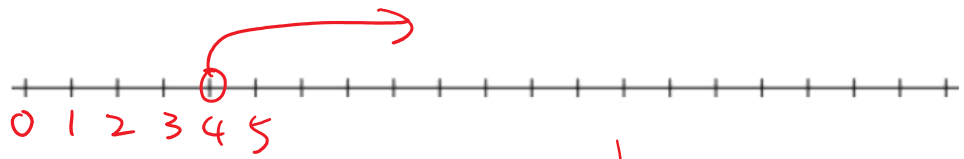
$4t - 4 > 12$

$+4 \quad +4$

$4t > 16$

$\div 4 \quad \div 4$

$t > 4$



b. $4.2s - 15.25 \leq 4 - 1.3s$

$+1.3s \quad +1.3s$

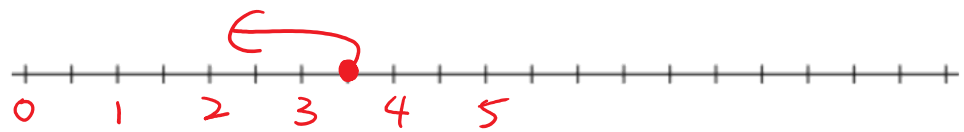
$5.5s - 15.25 \leq 4$

$+15.25 \quad +15.25$

$5.5s \leq 19.25$

$\div 5.5 \quad \div 5.5$

$s \leq 3.5$



c. $\frac{1}{2}+\frac{4}{7}p>\frac{13}{10}$ ×35 ×10 ×7

$\frac{35}{70}+\frac{40p}{70}>\frac{91}{70}$

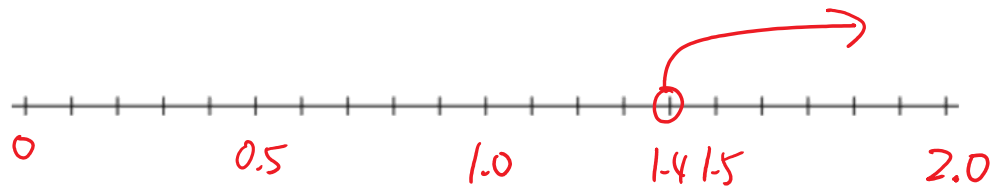
$35+40p>91$

$-35 \quad -35$

$40p>56$

$\div 40 \quad \div 40$

$p>1.4$



11. Do not solve each inequality. Determine which of the given numbers are solutions of the inequality.

a. $3t<-5$, -3, 0, 1

$3(-3)<-5$

$-9<-5$ ✓

$3(0)<-5$

$0<-5$ ×

$3(1)<-5$

$3<-5$ ×

b. $5-3d\geq 2-d$, −5, 0, 5

$5-3(-5)\geq 2-(-5)$

$5+15\geq 7$ ✓

$5-3(0)\geq 2-(0)$

$5\geq 2$ ×

$5-3(5)\geq 2-(5)$

$5-15\geq -3$

$-10\geq -3$ ×

12. Solve each inequality and graph the solution.

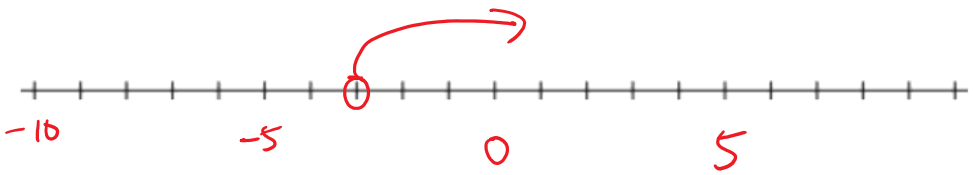
a. $-3.5a<-1.3a+6.6$

$+1.3a \quad +1.3a$

$-2.2a<6.6$

$\div -2.2 \quad \div -2.2$

$a>-3$



b. $-\frac{5f}{6}-\frac{2}{3}\geq\frac{4}{3}$ ×2

$-\frac{5f}{6}-\frac{4}{6}\geq\frac{8}{6}$

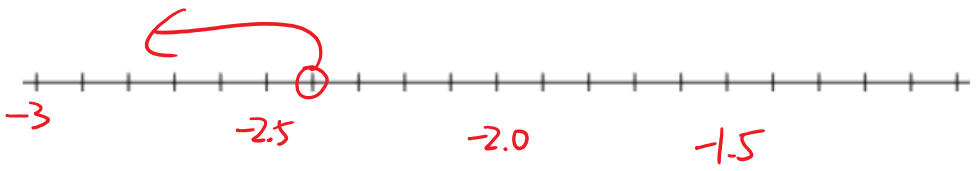
$-5f-4\geq 8$

$+4 \quad +4$

$-5f \geq 12$

$\div -5 \quad \div -5$

$f \leq \frac{-12}{5}$ or $f \leq -2.4$



c. $1.3-2.5x\leq -1.1x-0.52$

$+2.5x \quad +2.5x$

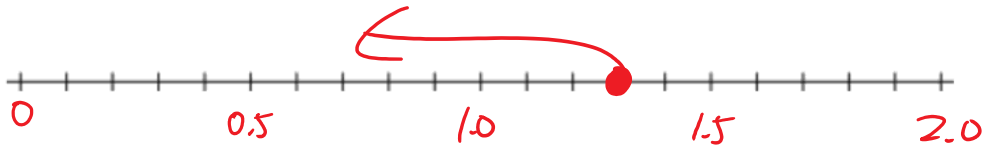
$1.3\leq 1.4x-0.52$

$+0.52 \quad +0.52$

$1.82\leq 1.4x$

$\div 1.4 \quad \div 1.4$

$1.3\leq x$



13. Nadia gets paid $1000 per month plus 5% commission on her sales. She wants to earn at least $2200 this month. Write an inequality to represent this situation, then solve it to determine how much Nadia must sell to reach her goal.

x: Her total sales. 5% = 0.05

$0.05x+1000\geq 2200.$

$0.05x+1000\geq 2200$

$-1000 \quad -1000$

$0.05x\geq 1200$

$\div 0.05 \quad \div 0.05$

$x\geq \$24{,}000$

She must have a minimum of $24,000 sales in order to receive $2200 pay.