NAME: _____

**Selected Response**

1. Which equation has $x = 9$ as its solution?

A) $\frac{x}{3} = 8 + 11$ B) $\frac{x}{3} + 8 = 11$ C) $\frac{3}{x} + 8 = 11$ D) $\frac{x+8}{3} = 11$

$\frac{9}{3} + 8 = 11$

$3 + 8 = 11$

2. Solve the equation: $\frac{5}{1} = \frac{15}{w}$

A) $w = 3$ B) $w = 5$ C) $w = 10$ D) $w = 75$

$5w = 15$

$\frac{5w}{5} = \frac{15}{5}$

$w = 3$

3. Which equation represents 7 less than four times a number is 14?

A) $7 - 4x = 14$ B) $4x - 7 = 14$ C) $4 - 7x = 14$ D) $7x - 4 = 14$

4. Which selection is a solution of the inequality $11 > 3 - 2w$ ?

A) $-6$ B) $-5$ C) $-4$ D) $-3$

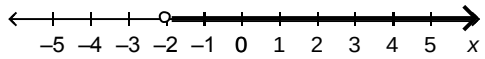
$11 \stackrel{?}{>} 3 - 2(-3)$

$11 \stackrel{?}{>} 3 + 6$

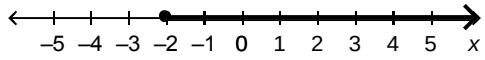
$11 > 9$ ✓

5. Which graph represents the solution of the inequality $4(-3x + 5) > 44$?

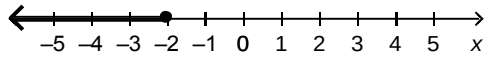
A)



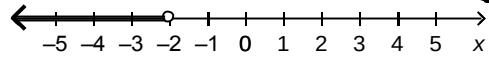

B)




C)




D)




$-12x + 20 > 44$

$-20 \quad -20$

$\frac{-12x}{-12} > \frac{24}{-12}$

$x < -2$

6. Solve this inequality: $-14t + 5 < 17 - 13t$

A) $t < -12$ B) $t > -12$ C) $t < -\frac{22}{27}$ D) $t > -\frac{22}{27}$

$+13t \quad +13t$

$-1t + 5 < 17$

$-5 \quad -5$

$\frac{-1t}{-1} < \frac{12}{-1}$

$t > -12$

7. A hockey camp charges a flat rate of \$52, plus \$12 per day. Chris spent more than \$136. Write an inequality to represent the number of days, $d$, for which he attended the hockey camp.

A) $52 + 12d \leq 136$ B) $52 + 12d < 136$ C) $52 + 12d \geq 136$ D) $52 + 12d > 136$

8. Find n if $4n - 16 = 36$.

$+16 \quad +16$

$\frac{4n}{4} = \frac{52}{4}$ $n = 13$

A) 12 B) 13 C) 14 D) 15

9. The Super Bowl is the most viewed sports event televised every year. There are over one billion viewers every year. Which inequality describes this situation?

A) $x > 1{,}000{,}000{,}000$ B) $x = 1{,}000{,}000{,}000$

C) $x < 1{,}000{,}000{,}000$ D) $x \leq 1{,}000{,}000{,}000$

10. Which number is a solution of $2x \leq x + 8$?

$-x \quad -x$ $x \leq 8$

A) 12 B) 11 C) 9 D) 6

**Constructed Response** Show ALL workings for FULL marks!!!

11. Circle and explain the error in solving this equation:

$$3(2x-5) = 7-3x$$
$$6x-5 = 4x$$
$$6x-5+5 = 4x+5$$
$$6x = 4x+5$$
$$6x-4x = 4x+5-4x$$
$$2x = 5$$
$$x = 2.5$$

They did not multiply every term inside the brackets by 3. The next line should be: $6x - 15 = 7 - 3x$

12. Two cell phone companies both charge a monthly fee, plus a rate for the number of minutes used.

| **Ring-a-ling** | **U-Talk** |
|---|---|
| Monthly Fee - $25.00 | Monthly Fee - $35.00 |
| $0.15 per minute | $0.05 per minute |

Write and solve an **equation** to find the number of minutes that both companies charge the **same** amount.

Ring-a-ling = U-Talk

$25 + 0.15m = 35 + 0.05m$

$-0.05m \quad -0.05m$

$25 + 0.1m = 35$

$-25 \quad -25$

$\frac{0.1m}{0.1} = \frac{10}{0.1}$ $m = 100$

Both companies charge the same amount when you talk on the phone for 100 minutes

13. The cost to rent a banquet hall is $500, plus $35 per person. A company's social committee has $4700 to put towards renting a banquet hall.

A) Write and solve an inequality to find the number of people that could attend the function.

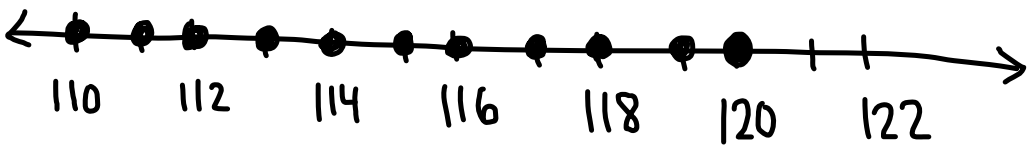
$500 + 35p \leq 4700$

$-500 \quad -500$

$\frac{35p}{35} \leq \frac{4200}{35}$

$p \leq 120$

B) Graph the inequality.




Note: The data is discrete. You cannot have part of a person.

14. Solve each equation. Show all steps.

A) $\frac{x}{4} - 3 = -12$

$+3 \quad +3$

$\frac{x}{4} \quad \frac{-9}{1}$

$x = -36$

B) $7x = 10 - 3x$

$+3x \quad +3x$

$\frac{10x}{10} = \frac{10}{10}$

$x = 1$

C) $\frac{1}{2}\left(5x - \frac{2}{3}\right) = \frac{2}{3}\left(\frac{x}{2} + 6\right)$

$\frac{5x}{2}^{x3} - \frac{2}{6} = \frac{2x}{6} + \frac{12}{3}^{x2}$

$_{x3}$

$\frac{15x}{6} - \frac{2}{6} = \frac{2x}{6} + \frac{24}{6}$

$15x - 2 = 2x + 24$

$-2x \quad -2x$

$13x - 2 = 24$

$+2 \quad +2$

$13x = 26$

$\frac{13x}{13} = \frac{26}{13}$

$x = 2$

D) $\frac{9}{x} \quad \frac{-6}{1}$

$-6x = 9$

$\frac{-6x}{-6} \quad \frac{9}{-6}$

$x = -\frac{3}{2} = -1\frac{1}{2} = -1.5$

E) $\frac{x}{4}+\frac{11}{2}=\frac{7}{4}$ (×2, ×2)

$\frac{x}{4}+\frac{22}{4}=\frac{7}{4}$

$x+22=7$

$-22 \quad -22$

$x=-15$

F) $4k+2(k+1)=3k+4$

$4K+2K+2=3K+4$

$6K+2=3K+4$

$-3K \quad -3K$

$3K+2=4$

$-2 \quad -2$

$\frac{3K}{3}=\frac{2}{3}$ $\quad K=\frac{2}{3}$

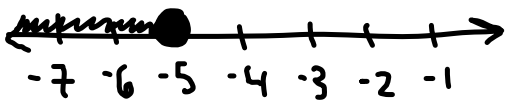
15. Solve, and graph, each inequality. Show all steps

A) $-5x+6\geq 31$

$-6 \quad -6$

$\frac{-5x}{-5}\geq\frac{25}{-5}$

$x\leq -5$




B) $-3x+7<-5x-8$

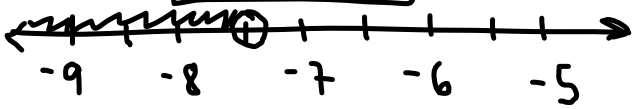
$+5x \quad +5x$

$2x+7<-8$

$-7 \quad -7$

$\frac{2x}{2}<\frac{-15}{2}$

$x<-7.5$




C) $\frac{7}{2}+\frac{3}{4}x<\frac{10}{1}$ (×2, ×4, ×4)

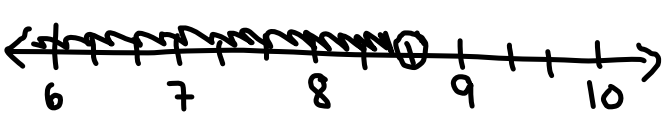
$\frac{14}{4}+\frac{3}{4}x<\frac{40}{4}$

$14+3x<40$

$-14 \quad -14$

$\frac{3x}{3}<\frac{26}{3}$

$x<\frac{26}{3}=8\frac{2}{3}$




D) $2(6x-4)>3(5x+5)$

$12x-8>15x+15$

$-15x \quad -15x$

$-3x-8>15$

$+8 \quad +8$

$\frac{-3x}{-3}>\frac{23}{-3}$

$x<-\frac{23}{3}=-7\frac{2}{3}$