Trig/Pre-Calc
Section P-1 & P-3
Quiz Review

Name: Key

Hour:_____

Solve the equation.

1. $\left(\frac{2}{5}x - \frac{1}{3}x = 3\right)\frac{15}{1}$ $6x - 5x = 45$ $\boxed{x = 45}$

$\frac{30}{5}x - \frac{15}{3}x = 45$

2. $\frac{12(x-48)}{12} = \frac{24}{12}$ $x - 48 = 2$ $\boxed{x = 50}$

3. $\left(\frac{3x-6}{4} + \frac{5x+9}{3} = -\frac{2}{1}\right)\frac{12}{1}$ $3(3x-6) + 4(5x+9) = -24$

$9x - 18 + 20x + 36 = -24$

$29x + 18 = -24$ $\frac{29x = -42}{29}$ $\boxed{x = -\frac{42}{29}}$

Simplify the expression. All exponents must be positive.

4. $\left(\frac{3}{xy^2}\right)^{-2} = \left(\frac{xy^2}{3}\right)^2 = \boxed{\frac{x^2y^4}{9}}$

5. $\left(\frac{30a^7b^7}{ab^4}\right)\left(\frac{2b^2}{6a^3b^9}\right) = \frac{60a^7b^9}{6a^4b^{13}} = 10a^3b^{-4} = \boxed{\frac{10a^3}{b^4}}$

6. $\frac{2ab^3c^{-3} \cdot 2a^3b^{-2}c^4}{(a^{-4}c^4)^{-1}} = \frac{4a^4bc}{a^4c^{-4}} = \boxed{4bc^5}$

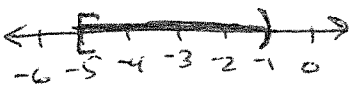
Use interval notation to describe the interval of real numbers. Then describe using the words *open, closed, half-open, bounded, unbounded.*

7. x is negative $x < 0$ or $-\infty < x < 0$ open + unbounded

8. $-5 \le x < -1$ $[-5, -1)$ half-open + bounded

9a. Show the graph of #7.

9b. Show the graph of #8.



Solve the inequality. Express in interval notation. Then graph it.

10. $\left(-\frac{7}{2} < \frac{x-1}{3} \le \frac{4}{5}\right)\frac{30}{1}$

$-7(15) < 10(x-1) \le 4 \cdot 6$

$-105 < 10x - 10 \le 24$

$+10 \quad +10 \quad +10$

$-95 < 10x \le 34$ $\div 10$

$\frac{-19}{5} < x < \frac{17}{5}$

$\left(\frac{-19}{5}, \frac{17}{5}\right]$

11. $8 \ge \frac{4x+2}{3} \ge -4$ $\left(-4 \le \frac{4x+2}{3} \le 8\right)3$

$-12 \le 4x + 2 \le 24$

$-14 \le 4x \le 22$

$\div 4$

$-\frac{7}{2} \le x \le \frac{11}{2}$

$\left[-\frac{7}{2}, \frac{11}{2}\right]$

$$\frac{-5}{2} \leq \frac{-x+4}{6} < \frac{10}{4}$$

a) Solve the inequality
b) express your answer in interval notation
c) graph your result

a) $\frac{12}{1} \cdot \frac{-5}{2} \leq \frac{12}{1} \cdot \frac{(-x+4)}{6} < \frac{12}{1} \cdot \frac{10}{4}$

$\frac{12}{1} \cdot \frac{-5}{12} \leq \frac{2}{12} \cdot \frac{(-x+4)}{10} < \frac{12}{1} \cdot \frac{10}{41}$

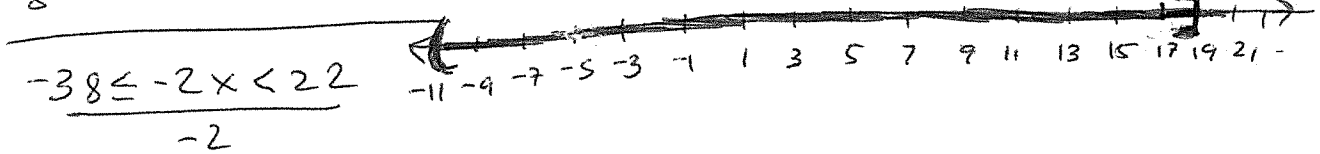
b) $(-11, 19]$

$6(-5) \leq 2(-x+4) <$ . . .

c)

$-30 \leq -2x + 8 < 30$
$-8 \quad -8 \quad -8$

$-38 \leq -2x < 22$
-2



$19 \geq x > -11$

$-11 < x \leq 19$