

Warm-up

Solve $2(2x - 3) + 3(x + 1) = 5x + 2$.

$$4x - 6 + 3x + 3 = 5x + 2$$

$$7x - 3 = 5x + 2$$

$$2x = 5$$

$$x = 5/2$$

Precalculus

Chapter P.3

Linear Equations and Inequalities

HW: P1-P4 Review Worksheet #11-22

Exam

Name Paulson

rev 1 P1:1

$$\begin{array}{r} 2.75 \\ 4 \overline{)11} \\ \underline{-9} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the decimal form for the rational number. If it repeats, then so indicate with a bar.

1) $\frac{11}{4}$

A) $2.\overline{75}$

B) $2.\overline{7}$

C) 2.75

D) 2.76

1) C

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Describe and graph the interval of real numbers.

2) $-3 < x < 4$



All real #'s greater than -3 and less than or equal to 4.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use an inequality to describe the interval of real numbers.

3) $-9 \leq x < 5$

A) $-9 \leq x < 5$

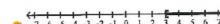
B) $-9 < x < 5$

C) $-9 < x \leq 5$

D) $-9 \leq x \leq 5$

3) A

Use interval notation to describe the interval of real numbers.



4) A) $(-\infty, 3)$

B) $[3, \infty)$

C) $(-\infty, 3]$

D) $[3, \infty)$

4) B

Use words to describe the interval of real numbers.

5) $x < -8$

A) The real numbers greater than or equal to -8.

B) The real numbers less than or equal to -8.

C) The real numbers less than -8.

D) The real numbers greater than -8.

5) C

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Convert to inequality notation. Find the endpoints and state whether the interval is bounded or unbounded, and its type.

6) $(-4, -1)$

$-4 < x < -1$. Endpoints at -4 and -1 = open

bounded

6) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use interval notation to describe the set of numbers.

7) Salary raises at Clemson University will average between 3% and 5.5%.

A) $[3, 5.5)$

B) $[5.5, 3]$

C) $(3, 5.5)$

D) $[3, 5.5]$

7) C

$(3, 5.5)$

Simplify the expression. Assume that the variables in the denominator are nonzero.

$$\frac{3^{-2}}{x^{-2}y^{-4}} = \frac{x^2y^4}{9}$$

8) A

Write the number in scientific notation.

9) D

Write the number in decimal form.

10) D

Handwritten work:

$$\left[\frac{3^{-2}}{x^{-2}y^{-4}} \right]^{-2} = \frac{3^{-2}}{x^{-2}y^{-4}} = \frac{x^2y^4}{3^2} = \frac{x^2y^4}{9}$$

Solving A Linear Equation

Solve $\left(\frac{5y-2}{8} = 2 + \frac{y}{4} \right)$ 8

$$5y - 2 = 16 + \frac{2y}{4}$$

$$\frac{-2y}{-2y} \quad \frac{-2y}{-2y}$$

$$3y - 2 = 16$$

$$\frac{+2}{+2} \quad \frac{+2}{+2}$$

$$\frac{3y}{3} = \frac{18}{3}$$

$$y = 6$$

Solving A Linear Inequality

Solve $3(x-1) + 2 \leq 5x + 6$ $-7/2 \leq x$

$$3x - 3 + 2 \leq 5x + 6$$

$$3x - 1 \leq 5x + 6$$

$$\frac{-3x}{-3x} \quad \frac{-3x}{-3x}$$

$$-1 \leq 2x + 6$$

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

$$\frac{-7}{2} \leq \frac{2}{2}x$$

$$-7/2 \leq x$$

Solving A Linear Inequality

Solve $\left(\frac{x}{3} + \frac{1}{2} > \frac{x}{4} + \frac{1}{3} \right)$ 12 $x > -2$

$$\frac{12x}{3} + \frac{12}{2} > \frac{12x}{4} + \frac{12}{3}$$

$$4x + 6 > 3x + 4$$

$$\frac{-3x}{-3x} \quad \frac{-3x}{-3x}$$

$$x + 6 > 4$$

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

$$x > -2$$

Solving A Double Inequality

Solve $\left(-3 < \frac{2x+5}{3} \leq 5\right) \cdot 3$

$$\boxed{-7 < x \leq 5}$$

$$\begin{array}{r} -9 < 2x+5 \leq 15 \\ -5 \quad -5 \quad -5 \end{array}$$

$$\frac{-14 < 2x \leq 10}{2 \quad 2 \quad 2}$$

$$\boxed{-7 < x \leq 5}$$

Finding the Slope of a Line

Find the slope of the line through the two points.

1. $(-1, 2)$ and $(4, -2)$

2. $(1, 1)$ and $(3, 4)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 2}{4 - (-1)}$$
$$= \frac{-4}{5}$$
$$\boxed{-\frac{4}{5}}$$