

Name _____

Class _____

Review for TEST #5

Solve for the value(s) of x . Reduce all fractions if possible.

Column A

Column B

1. $11\left|\frac{1}{2}x + 4\right| - 3 = 30$
 $+3 +3$

$$\frac{11\left|\frac{1}{2}x + 4\right|}{11} = \frac{33}{11}$$

$$\frac{1}{2}x + 4 = -3 \quad \frac{1}{2}x + 4 = 3$$

 $-4 \quad -4 \quad -4 \quad -4$

$$\frac{1}{2}x = -7 \quad \frac{1}{2}x = -1$$

 $x = -14, -2$

1. $7\left|\frac{1}{3}x - 5\right| + 6 = 20$
 $-6 -6$

$$7\left|\frac{1}{3}x - 5\right| = \frac{14}{7}$$

$$\frac{1}{3}x - 5 = 2 \quad \frac{1}{3}x - 5 = -2$$

 $+5 +5 \quad +5 +5$

$$\frac{1}{3}x = 7 \quad \frac{1}{3}x = 3$$

$$x = 21 \quad x = 9$$

2. $\frac{1}{2}|3x - 7| + 8 = 15$
 $-8 -8$

$$\frac{1}{2}|3x - 7| = 7$$

$$3x - 7 = 14 \quad 3x - 7 = -14$$

 $+7 +7 \quad +7 +7$

$$3x = 21 \quad 3x = -7$$

$$x = 7 \quad x = -\frac{7}{3}$$

2. $\frac{1}{2}|4x - 12| + 2 = 8$
 $-2 -2$

$$\frac{1}{2}|4x - 12| = 6$$

$$4x - 12 = 12 \quad 4x - 12 = -12$$

 $+12 +12 \quad +12 +12$

$$4x = 24$$

$$x = 6$$

$$4x = 0$$

$$x = 0$$

3. $\frac{13 - (2x - 5x)}{4} = 10$

$$\frac{13 - (-3x)}{4} = 10$$

$$\frac{13 + 3x}{4} = 10 \quad 3x = 27$$

 $-13 -13 \quad x = 9$

$$x = 9$$

3. $6x - 10x + 3 = 10 - 2x$

$$-4x + 3 = 10 - 2x$$

 $+4x +4x$

$$3 = 10 + 2x$$

 $-10 -10 \quad x = -\frac{7}{2}$
 $-7 = 2x$

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

4. $\frac{12(18 + 3x)}{12} = \frac{144}{12}$

$$18 + 3x = 12$$

 $-18 -18$

$$\frac{3x}{3} = \frac{-6}{3} \quad x = -2$$

4. $\frac{1}{2}(3x - 11) = 5$

$$3x - 11 = 10$$

 $+11 +11$

$$3x = 21$$

$$x = 7$$

Solve for $y = mx + b$. Reduce all fractions if possible.

Column A

Column B

5. Solve for y in $y = mx + b$ form.

$$6y - 2x = 18$$

$$\frac{-2x + 2x}{6} \quad \frac{+2x}{6}$$

$$\frac{6y}{6} = \frac{18 + 2x}{6}$$

$$y = \frac{1}{3}x + 3$$

5. Solve for y in $y = mx + b$ form.

$$4x - 7x = 28$$

6. $\frac{15a^{15}b^2}{25a^{11}} \cdot b^7a^3$

$$\frac{3}{5} a^4 b \cdot b^7 a^3$$

$$\frac{3}{5} a^7 b^8$$

6. $\frac{12x^6y^{10}}{36y^8x^2} \cdot 9x^7y^4z^6$

$$\frac{1}{3} y \cdot 9x^7y^4z^6$$

$$3x^7y^5z^6$$

Solve for $y = mx + b$. Then graph the following.

7a. $4x - 3y = 12$

$$\frac{-4x}{-3} \quad \frac{-4x}{-3}$$

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

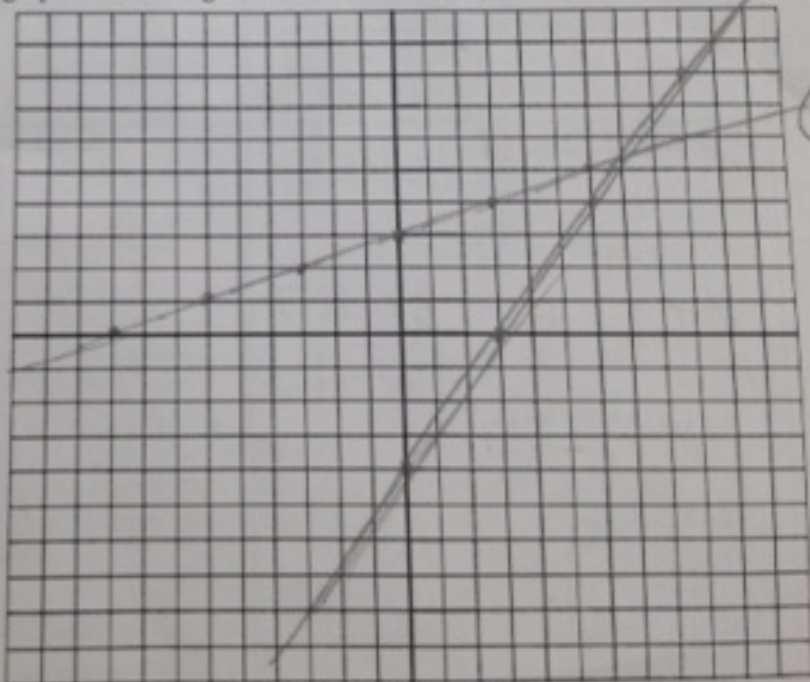
$$y = \frac{4}{3}x - 4$$

7b. $6y - 2x = 18$

$$\frac{+2x + 2x}{6}$$

$$\frac{6y}{6} = \frac{2x + 18}{6}$$

$$y = \frac{1}{3}x + 3$$



Decide whether the following is an equation or expression (solving or simplifying).

Column A

Column B

12. $2x(14 - 6x + 3x^2)$
 $28x - 12x^2 + 6x^3$

12. $-4x^2(-2 - 3x + 5)$
 $8x^2 + 12x^3 - 20x^2$
 $-12x^2 + 12x^3$

13. $5y(3x - 6 + 2y^2)$
 $15xy - 30y + 10y^3$

13. $9y^2(10 - 4y + 3x)$
 $90y^2 - 36y^3 + 27xy^2$

14. $5x - (x + 1) = 5 - 2x$
 $5x - x + 1 = 5 - 2x$
 $4x - 1 = 5 - 2x$
 $+2x \quad +2x$
 $6x - 1 = 5 + 1 \quad \frac{6x=6}{x=1}$

14. $3 + 2x - (x + 1) = 3x - 6$
 $3 + 2x - x - 1 = 3x - 6$
 $x - 2 = 3x - 6$
 $-2 = 2x - 6 \quad \frac{2x=4}{x=2}$

15. $2x(6x + 5 - 3y)$
 $12x^2 + 10x - 6xy$

15. $y(2x - 9 + 4y)$
 $2xy - 9y + 4y^2$

16. $g(x) = x^3 + 5$
 Find $g(4)$ $4^3 + 5$
 $64 + 5 = 69$
 Find $g(0)$ $0^3 + 5 = 5$

16. $f(x) = 7 + |x|$
 Find $f(12)$ $7 + |12| = 19$
 Find $f(-4)$ $7 + |-4| = 11$

$\sqrt{66}$

Column A

8. Solve for w. $\frac{P}{2} = \frac{1}{2}(l+w)$

$$\frac{P}{2} = l + \frac{w}{2}$$

$$\frac{P}{2} - w = l$$

9. Solve for g. $V = \frac{1}{3}gh + e$

$$V - e = \frac{gh}{3}$$

$$\frac{3(V - e)}{h} = g$$

10. Solve for r. $A = \frac{1}{2}\pi r^2$

$$A = \frac{\pi r^2}{2}$$

$$2A = \pi r^2$$

$$r^2 = \frac{2A}{\pi} \quad r = \sqrt{\frac{2A}{\pi}}$$

11. Solve for r. $V = \frac{4}{3}\pi r^2$

$$V = \frac{4\pi r^2}{3}$$

$$\frac{3V}{4\pi} = \frac{4\pi r^2}{4\pi} \quad r = \sqrt{\frac{3V}{4\pi}}$$

Column B

8. Solve for w. $P = 2l + 2w$

$$P - 2l = 2w$$

$$\frac{P - 2l}{2} = w$$

9. Solve for h. $P = \frac{gh + e}{2}$

$$2P = gh + e$$

$$\frac{2P - e}{g} = h$$

10. Solve for r. $V = \pi r^2 h$

$$\frac{V}{\pi h} = r^2$$

$$r = \sqrt{\frac{V}{\pi h}}$$

11. Solve for r. $V = 3r^2 + w$

$$\frac{V - w}{3} = r^2$$

$$r = \sqrt{\frac{V - w}{3}}$$