Midterm Review

1. Add $4 + (-16)$

-12

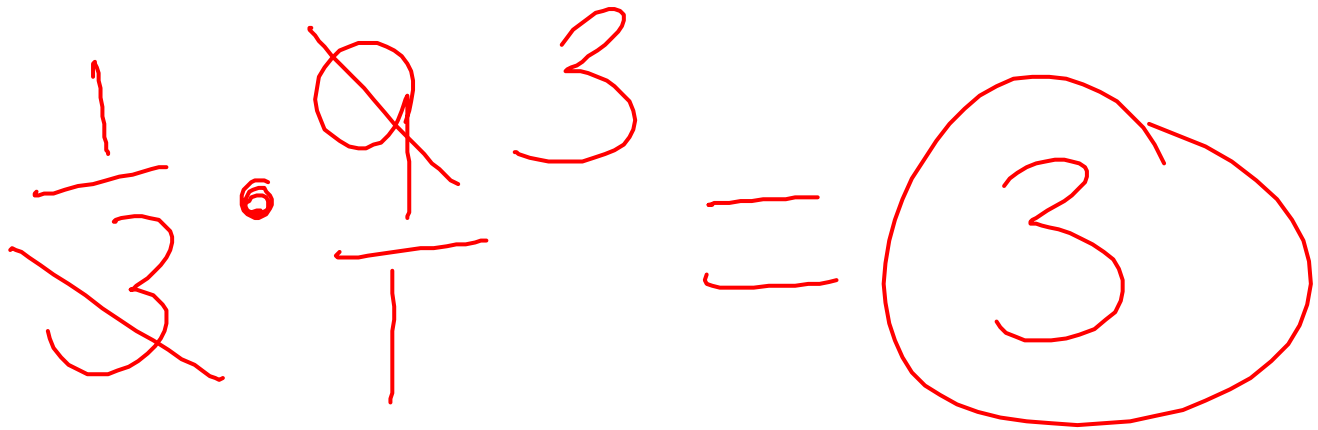
2. Multiply -3(-12)

36

3. Divide $-33 \div -11$

3

4. Divide $\frac{1}{3} \div \frac{1}{9}$



5. Solve the equation $-4x + 7 = 23$

$-7 \quad -7$

$-4x = 16$

$\frac{-4x}{-4} = \frac{16}{-4}$

$x = -4$

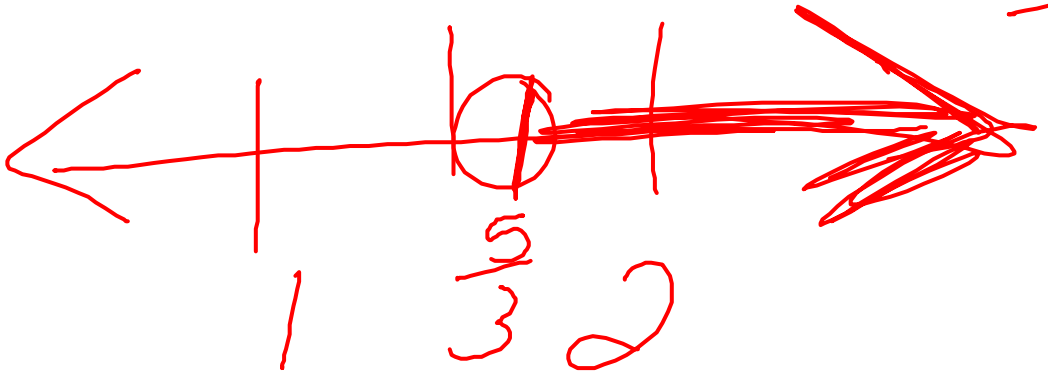
6. Solve and graph the inequality

$$3x + 7 > 12$$

$-7 \quad -7$

$$3x > 5$$

$$\frac{3x}{3} > \frac{5}{3}$$



$$x > \frac{5}{3}$$

Use the Distributive Property

7. $-3(x+7)$

$-3x-21$

8. $-(h+x-z)$

$-h-x+z$

Factor by GCF

9. 10x+20

$10(x+2)$

10. 15x-45

$15(x-3)$

11. What is the slope of the linear equation?

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

$$-\frac{1}{4}$$

12. What is the y-intercept of the linear equation?

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

3

13. Which point lines on the line?

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

a. (4,7)

b. (-3,2)

c. (8, 1)

d. (-1,5)

e. none of these

$7 = -\frac{1}{4}(4) + 3$

$-1 + 3$

$7 \neq 2$

$2 = -\frac{1}{4}(-3) + 3$

$2 \neq \frac{3}{4} + 3$

$1 = -\frac{1}{4}(8) + 3$

$1 = -2 + 3$

$1 = 1$ ✓

$5 = -\frac{1}{4}(-1) + 3$

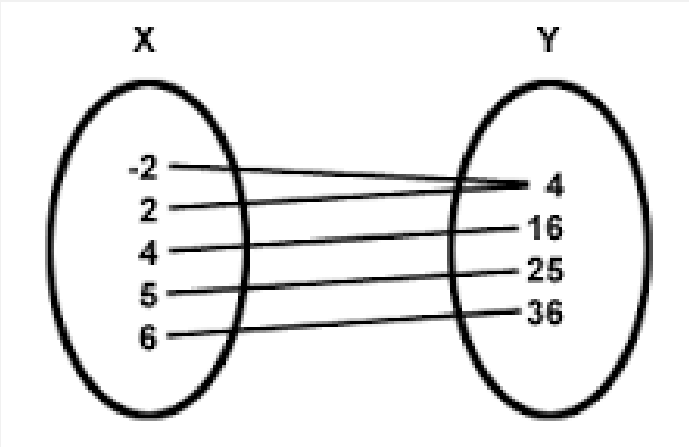
$5 \neq \frac{1}{4} + 3$

14. What is the slope of the line that passes through the points (4,7) and (-1,5)

$$\frac{\Delta y}{\Delta x} \quad \frac{7-5}{4-(-1)} = \frac{2}{5}$$

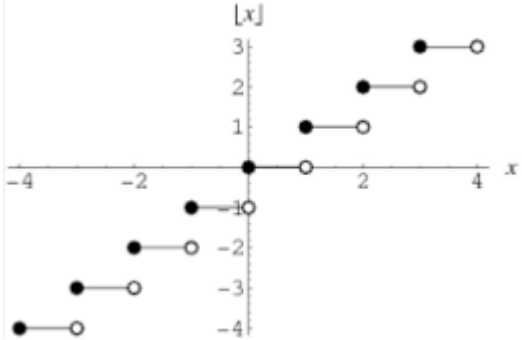
15. Which of the following is NOT a function?

a.

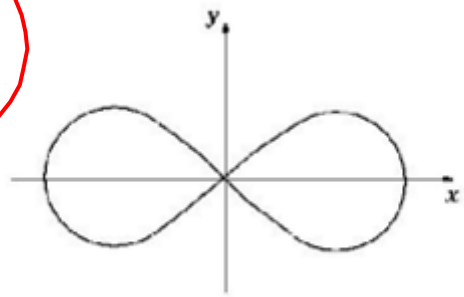


b. $\{(1,3),(4,7),(5,3),(-1,8)\}$

c.



d.



Solve and graph each inequality.

16. $3 + x \geq 12$

$-3 \quad -3$

$x \geq 9$

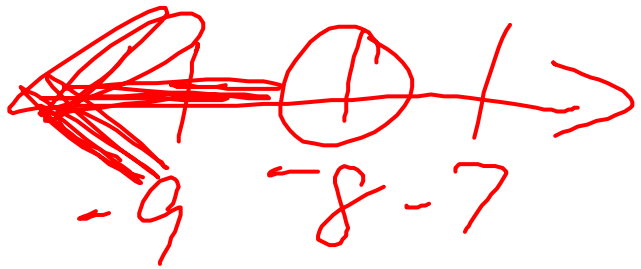
17. $21 \leq -2x + 5$

$-5 \quad -5$

$16 < -2x$

$\frac{16}{-2} < \frac{-2x}{-2}$

$-8 > x$



★remember to flip sign if x or ÷ by negative

18. Solve the equation.

$$4 + 3(x - 4) = 7x - 12$$

$4+3x-12=7x-12$

$3x-8=7x-12$

$-3x \qquad -3x$

$-8=4x-12$

$+12 \qquad +12$

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

$x=1$

19. Solve the equation

$$3x + 19 = -(x + 3)$$

$3x + 19 = -x - 3$

$+x \qquad +x$

$4x + 19 = -3$

$-19 \qquad -19$

$4x = -22$

$\frac{4}{4} \qquad \frac{-22}{4}$

$-\frac{22}{4} = \frac{-11}{2}$

20. Order each step to solving the equation $-10x + 2 - (5x + 7) = 25$

1. $x = -2$
2. $-15x - 5 = 25$
3. $-15x = 30$

2, 3, 1

$-10x+2-5x-7=25$

$-15x-5=25$

$+5 \quad +5$

$-15x=30$

$\frac{-15x}{-15} = \frac{30}{-15}$

$x=-2$