

1) Simplify.

$$v^6 / v^8$$

$$= v^{(6-8)}$$

$$= v^{-2}$$

$$= \frac{1}{v^2}$$

Write your answer without using negative exponents.

2) Factor and Simplify.

$$72yz + 81xyz$$

$$= 9yz(8 + 9x)$$

3) Factor the following expression.

$$18u^2v^5y^4 + 12u^8v^8$$

$$= 6u^2v^5(3y^4 + 2u^6v^3)$$

4) Rewrite without parentheses.

$$-4rs^3 - (6s^2 - 8r^4 + 9)$$

$$= -4rs^3 - 6s^2 + 8r^4 - 9$$

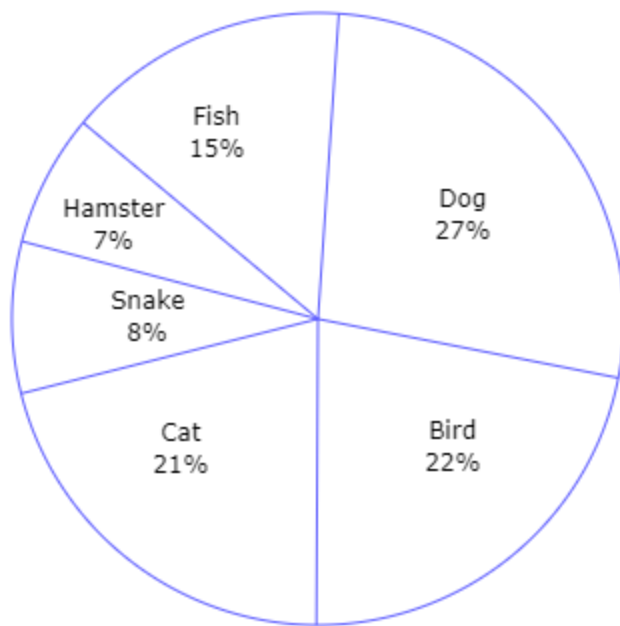
Simplify your answer as much as possible

5) Factor.

$$4x + 20$$

$$= 4(x + 5)$$

6) The citizens of a city were asked to choose their favorite type of pet. The circle graph shows how the citizens answered. If 105,000 citizens answered the question, how many chose Bird?



22% of 105000

$$= \frac{22}{100} \times 105000$$

$$= 23100 \text{ citizens}$$

7) Solve for x.

$$4 = (3x - 16) / 2$$

$$4 \times 2 = 3x - 16$$

$$8 = 3x - 16$$

$$3x = 8 + 16$$

$$3x = 24$$

$$x = 8$$

Simplify your answer as much as possible.

8) Solve for u.

$$-6/5 = -u/4 - 5/3$$

$$\text{L.C.M} = 60$$

$$-6/5 \times 60 = -u/4 \times 60 - 5/3 \times 60$$

$$-72 = -15u - 100$$

$$-15u = -72 + 100$$

$$-15u = 28$$

$$u = -28/15$$

Simplify your answer as much as possible.

9) Use the distributive property to remove the parentheses.

$$10a^3(2a^4 + 5a)$$

$$= (10 \times 2)a^{(3+4)} + (10 \times 5)a^{(3+1)}$$

$$= 20a^7 + 50a^4$$

Simplify your answer as much as possible.

10) Solve for V

$$v^2 + 9v + 14 = 0$$

$$\text{sum} = 9$$

$$\text{product} = 14$$

$$\text{roots } (7, 2)$$

$$v^2 + 7v + 2v + 14 = 0$$

$$v(v + 7) + 2(v + 7) = 0$$

$$(v + 2)(v + 7) = 0$$

$$v + 2 = 0$$

$$v = -2$$

$$v + 7 = 0$$

$$v = -7$$

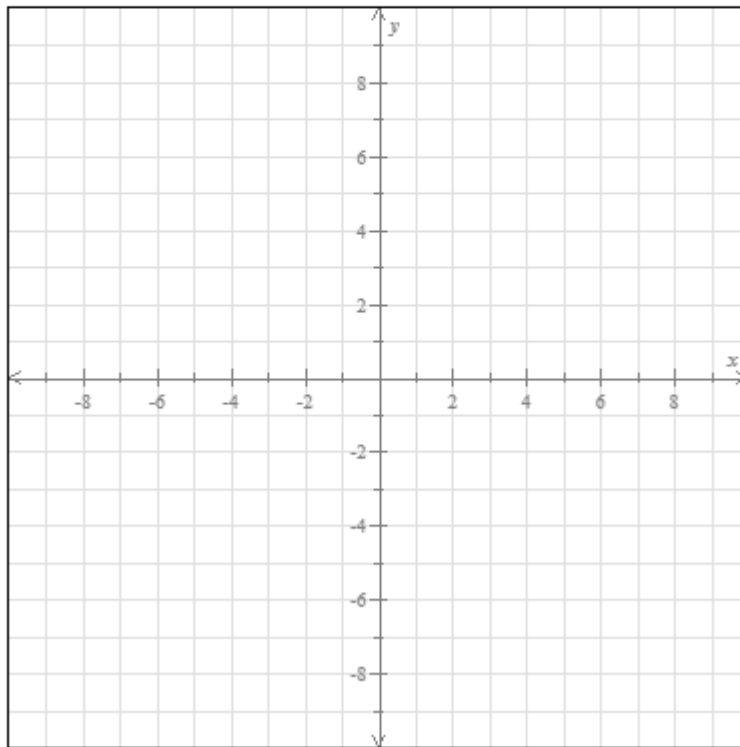
$$v = -2, -7$$

If there is more than one solution, separate them with commas.

11)

Graph the line.

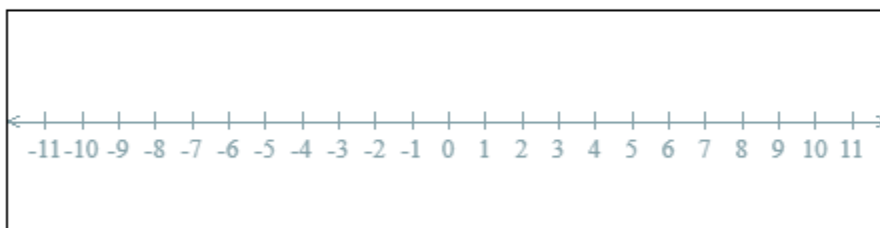
$$2x + y = -2$$



12)

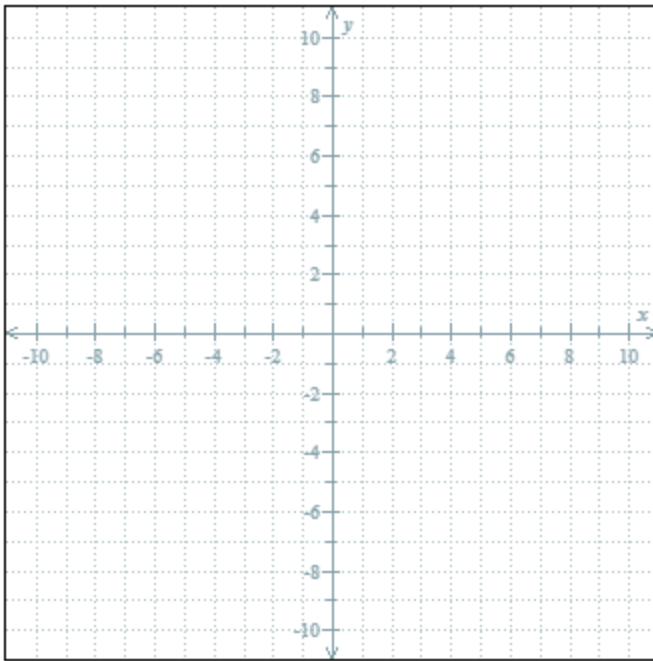
Graph the inequality below on the number line.

$$y < -1$$



13)

Graph the line whose x -intercept is -9 and whose y -intercept is -5 .



14)

Multiply.

$$3v^2 * 5v^4$$

$$= (3 \times 5) v^{(2+4)}$$

$$= 15v^6$$

Simplify your answer as much as possible.

15)Simplify.

$$6y^2 (2y + 3)$$

$$= 12y^3 + 18y^2$$

Write your answer without parentheses.

16)Translate the phrase into an algebraic expression.

The product of 6 and c

$$= 6c$$

17) Solve for y.

$$22 = -8y + 5(y + 5)$$

$$22 = -8y + 5y + 25$$

$$22 - 25 = -8y + 5y$$

$$-3 = -3y$$

$$3y = 3$$

$$y = 1$$

Simplify your answer as much as possible.

18)

Find the greatest common factor of these two expressions.

$$24w^3x^6u^7 \text{ and } 18w^5u^4$$

$$= 6w^3u^4$$

19) Evaluate. Write your answers as fractions.

$$2^{3/3} = 8/3$$

$$-(1/4)^2 = -1/16$$

20)

Solve for w.

$$7.5 = w/3$$

$$w = 7.5 \times 3$$

$$w = 22.5$$

21)

Factor $w^2 - 16$

$$\text{sum} = 0$$

$$\text{product} = -16$$

$$\text{roots } (-4, 4)$$

$$w^2 + 4w - 4w - 16$$

$$w(w + 4) - 4(w + 4)$$

$$(w - 4)(w + 4)$$

$$22) \text{ Multiply } (5x + 2)(7x - 6)$$

$$35x^2 - 30x + 14x - 12$$

$$35x^2 - 16x - 12$$

$$23) \text{ Solve for } u.$$

$$30 = 6u/5$$

$$6u = 30 \times 5$$

$$6u = 150$$

$$u = 150/6$$

$$u = 25$$

Simplify your answer as much as possible.

$$24)$$

What is 30% of 94?

$$0.3 \times 94$$

$$3/10 \times 94$$

$$28.2/10 = 2.82$$

$$25)$$

Simplify.

$$(-5y^2 + 7y - 1) + (2y^2 + 6y + 4)$$

$$= -5y^2 + 2y^2 + 7y + 6y - 1 + 4$$

$$= -3y^2 + 13y + 3 \text{ or } 3y^2 - 13y - 3$$

26)

Find the slope and the y-intercept of the line.

$$y = 5x - 6$$

$$y = Mx + b$$

M – gradient/slope

b – y-intercept

$$\text{slope} = 5$$

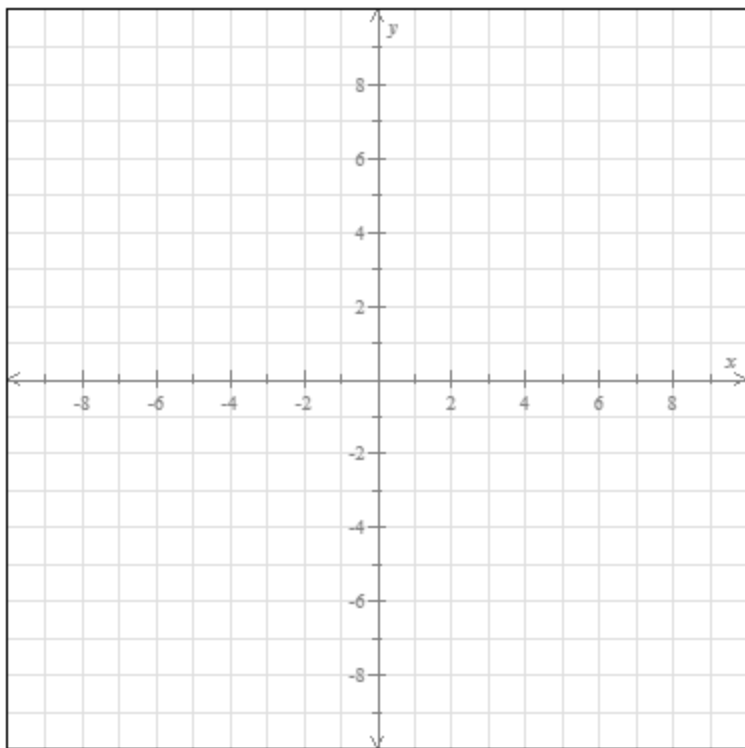
$$\text{y-intercept} = (0, -6)$$

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27)

Graph the line.

$$y = 3x - 7$$



28)

Simplify.

$$\frac{z^7 y}{z^5 y^4}$$

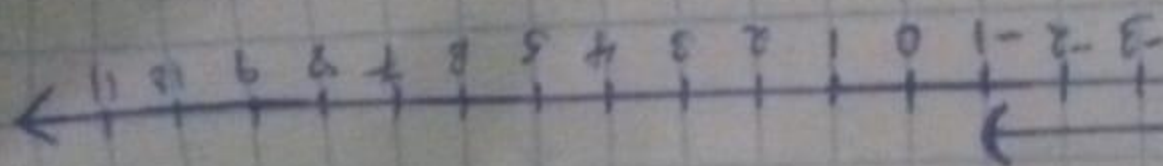
$$z^{(7-5)}y^{(1-4)}$$

$$z^2 y^{-3} \text{ or } \frac{z^2}{y^3}$$

29)

Write 0.003362 in scientific notation

$$= 3.362 \times 10^{-3}$$



-6

-5

114

$$\frac{20.00}{2.5} = 8$$

$$\frac{0}{2} = 0$$

$$\frac{3}{2.7} = 1.11$$

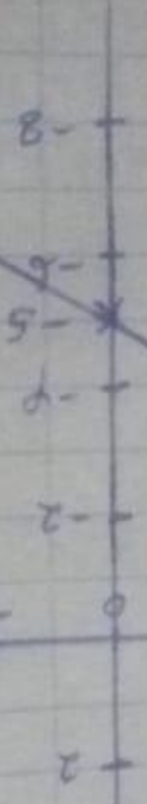
$$\frac{0.80}{3} = 0.27$$

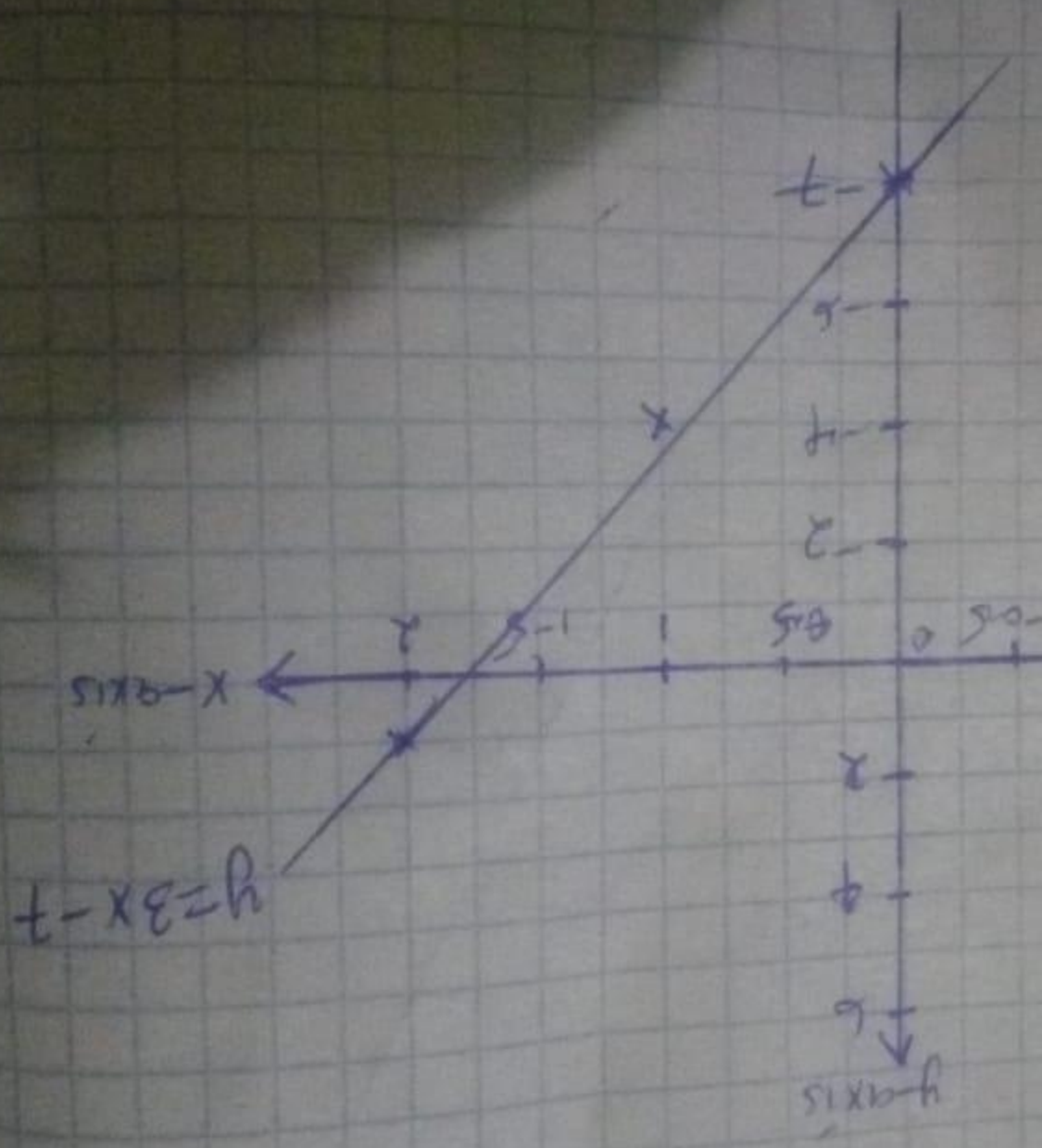
$$\frac{0.12}{0.12} = 1$$

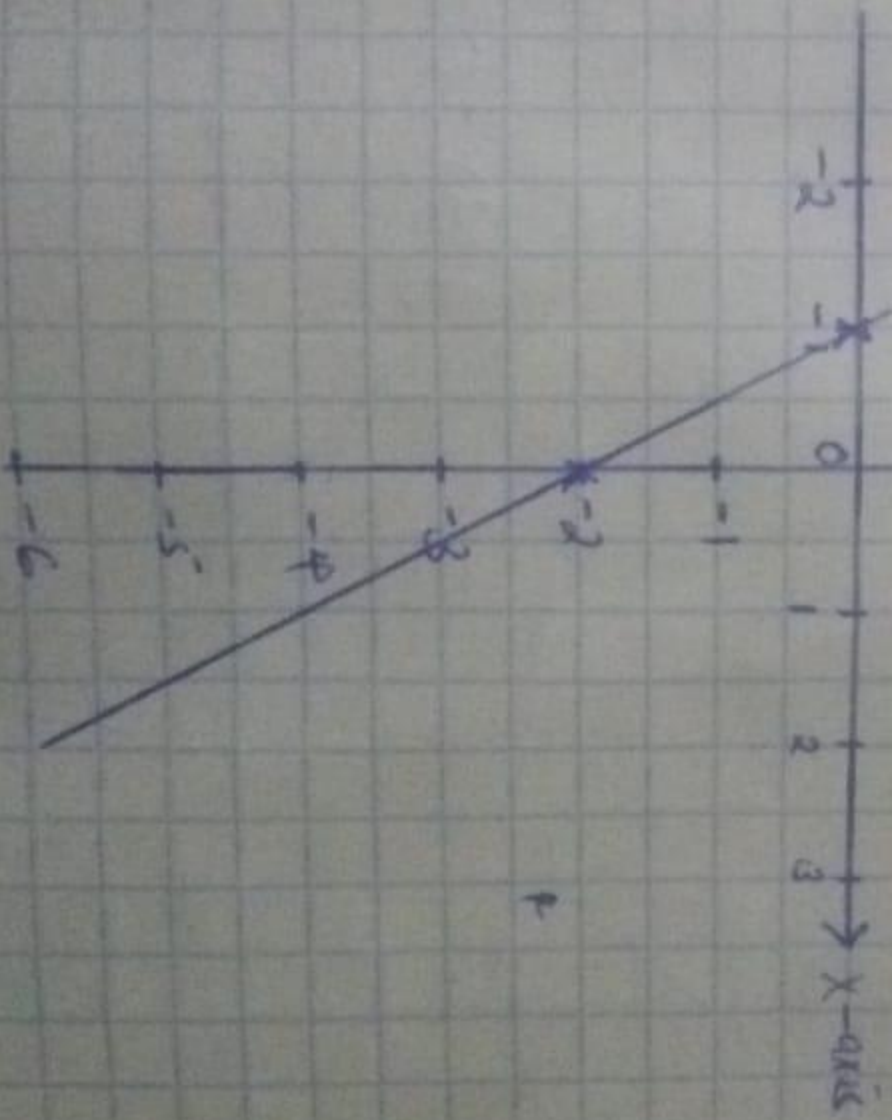
$$9y = -5x + 25$$

$$x - 9x = 15$$

$$y - 9x = 15$$







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