

Math 30 Exam 3 Review

You may not use a calculator on this exam.

1. Make a table and then graph the equation. Label all of the points on the graph.

a) $y = -\frac{5}{2}x + 3$ b) $y = 3x$ c) $x=4$

2. Use the rules for exponents to simplify the following expressions.

a) $2s g^3 s^3 g^4$ b) $-7k^5(-5k)(k^9)$ c) $(5x^3)^2(x^4)^3$

3. Add or subtract the polynomials. a) $(4c^2 + 4c - 4) + (-2c^2 + 5c + 4)$ b) $(3a^2 - 2a + 4) - (a^2 + 3a - 7)$

4. Multiply the polynomials.

a) $(x-5)(2x+4)$ b) $(x+2)(x^2 - 3x + 1)$ c) $3q^2(q^2 - 2q + 7)$ d) $(2x-3)^2$

5. I) determine if the following expression is a polynomial

II) If it is a polynomial, then classify the polynomial as a monomial, a binomial, or a trinomial.

III) If it is a polynomial, then find the degree of the polynomial.

a) $x^2 + x + 7$ b) $\frac{1}{2}p^4 - p^2$ c) $3x^{-4} + x^2$

6. **a) describe the variable, b) form an equation, c) Solve, answer, and say what this means.** The total cost to paint the inside of a house was \$2692. This cost included \$250 for materials and \$66 per hour for labor. how many hours of labor were required?

7. Solve the following equations for their given variable.

f) $8 + 4 + 3d = 24$ g) $-1 = -8 + \frac{h}{-2}$ h) $9(y - 1) = 27$

i) $5j + 6(j + 1) = 28$ j) $10 - (w + 4) = -12$ k) $3(7 - y) = 3(2y + 1)$

l) $\frac{2}{3} + y = \frac{4}{3}$ m) $\frac{1}{4}y - \frac{2}{3} = \frac{1}{2}$ n) $-1 - 9 + \frac{2y}{15} = y$

8. Explain what is being done and why it is valid. $\frac{5}{8} = \frac{5}{8} \cdot \frac{2}{2} = \frac{10}{16}$

9. **a) describe the variable, b) form an equation, c) Solve, answer, and say what this means** According to the Environmental Protection Agency, 58 million tons of waste was collected for recycling in 2005. This is 2 million tons less than twice the amount of waste collected for recycling in 1990. Find the amount of waste collected for recycling in 1990.

10. Place in scientific notation a) 12300000, b) 0.0000035

11. John read 125 of the 400 pages in his book this week. What fraction of his book does he have left?

12. **a) describe the variable, b) form an equation, c) Solve, answer, and say what this means.** Jim decided to take a cruise to the bahamas. The trip is going to cost him \$1125. He has \$800 in his account. How much more money does Jim need to save?

13. A Doctor earns X dollars per year. (4pts)

a) Express her salary per month.(12 months in a year)

b) Express her salary per week.(52 weeks in a year)

14. Evaluate this expression when $x=0$ and $y= -4$: $[-2x - y + 10]$

15. Evaluate this expression when $z= -2$ and $p= -1$: $-3z^2 p$

16. Use the distributive property to remove parenthesis. $-(3e + 3)$

17. Simplify by combining like terms.

a) $12a - A - a - 8A - a$

b) $6(t + 3) - 9(2 - t)$

18. A landscaper buried a water line around a rectangular lawn to serve as a supply line for a sprinkler system. The length of the lawn is 5 times its width. Express the Length and the Width using one variable.

Length =

Width =

19. For the following word problems, **a) describe the variable, b) form an equation, c) Solve, answer, and say what this means.** A landscaper buried a water line around a rectangular lawn to serve as a supply line for a sprinkler system. The length of the lawn is 5 times its width. If 240 feet of pipe was used to do the job, what is the width of the lawn? (please draw a picture, just do it!)

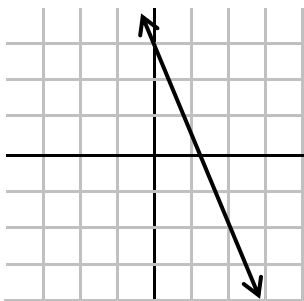
20. Translate. A) The quotient of 6 and 3 **is equal** to a number plus 3

b) 4 **subtracted from** 8 **is equal** to the product of a number and 3

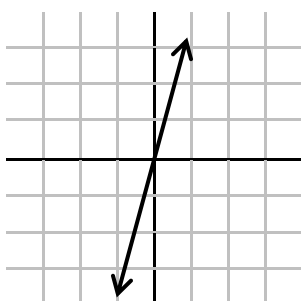
Answers:

1. two points should be labeled!

a)



b)



c) ask

2. a) $2s^4g^7$

b) $35k^{15}$

c) $25x^{18}$

3. a) $2c^2 + 9c$

b) $2a^2 - 5a + 11$

4. a) $2x^2 - 6x - 20$

b) $x^3 - x^2 - 5x + 2$

c) $3q^4 - 6q^3 + 21q^2$

d) $4x^2 - 12x + 9$

5. a) yes, trinomial, 2

b) yes, binomial, 4

c) NO

6 x = the number of hours of labor required, $2692 = 250 + 66x$, $x = 37$, 37 hours of labor required.

7. f) 4 g) -14 h) 4 i) 2 j) 18 k) 2 l) $2/3$ m) $14/3n$ n) $-150/13$

8. look in your notes chpt. 4 page. 2

9. x = the amount of waste collected for recycling in 1990. Equation: $2x - 2 = 58$ Answer: $x = 30$, 30 million tons of waste was collected for recycling in 1990

10. a) 1.23×10^7 , b) 3.5×10^{-6}

11. $275/400 = 11/16$

12. $11/16$ 10. X = the amount of money Jim needs to still save. $800 + x = 1125$. $x = \$325$

13. a) $x/12$

b) $x/52$

14. 14

15. 12

16. $-3e^{-3}$

17) a) $10a - 9A$

b) $15t$

18. Length = $5w$

Width = w

19. a) W = width of the lawn

b) $w + 5w + w + 5w = 240$

c) $12w = 240$, so $w = 20$ feet, the width is 20 feet

20. a) $6/3 = x + 3$

b) $8 - 4 = x \cdot 3$