Name_____

Summer work for students entering Algebra II (332 & 338)

This packet contains the topics you have learned in your previous courses that are most important to Algebra II. Please read the directions, show your work, and answer on the page provided.

Due: Monday, August 26, 2022.

Solve the following problems

1. What is the product of -10 and +5?

2. Add: -10 + 5

3. What is the quotient of -16 and -4?

4. Subtract: -1 − -8

5. Calculate: |-6 × 2 + -4 × -3|

6. Simplify the following expressions:

a) $4x + 5 + 2x$

b) $-6x + 4z + -3x - 10z$

c) $10y - -2y - 3z - 9z - 6y$

d) $x^5 \times y^4 \times x^{-7} \times y^{10}$

e) $x^8 \div x^2$

f) $(4x)^3$

g) $(-5c)^4$

7. Solve the following equations for x:

a) $x - 2 = -7$

b) $x - -2 = -7$

c) $(2/3)x = 6$

d) $-2x + 5 = -11$

e) $ax + b = -e$

8. Solve the following inequalities. Graph on the number line

a) $3x - 2 > -11$

b) $-5f < -10$

c) $2x + 5 > 12$

9. Add the following polynomials:

a) $9z^8 + 2z^5 + 4z^2 + 2$ and $5z^8 + -6z^5 + -4z^2 + -1z + -8$

b) $z^6 + 5z^4 + -10z^3 + -7$ and $-z^6 + 8z^4 + 4z^3 - 8$

10. Multiply the following polynomials and simplify

a) $4x^3(2x^2 + x - 5)$

b) $(4x^3 + 4x)(2x^2 + x - 5)$

11. Find the greatest common factor of the following expressions:

a) 15, 30

b) $15x^3$, $30x^2$

12. Factor the following polynomials

a) $12x^2 + 24x^3 + - 18x$

b) $x^2 - 3x - 18$

c) $x^6 + 13x^5 + 42x^4$

13. How many ways can you and 3 other friends sit on 4 chairs? _____

14. A bag contains 2 blue balls, 5 red balls, and 3 white balls.

You pick a ball from the bag and put in your pocket. What is the probability of picking:

a) a white ball?

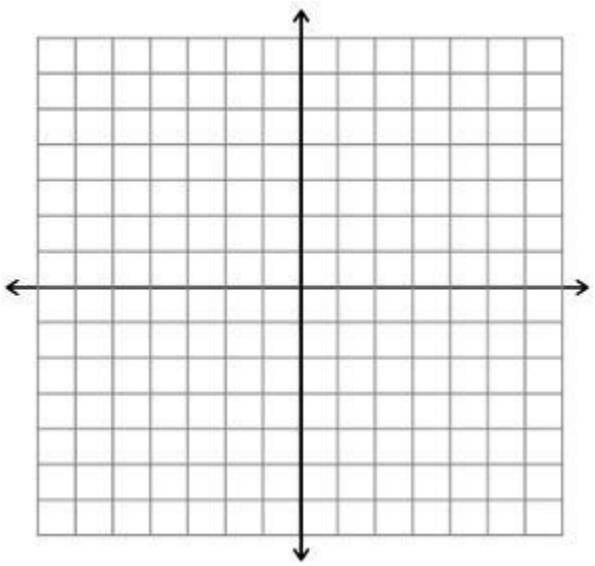
b)a blue ball or a red ball?

c) two red balls?

d) a blue ball and a white ball

15. Solve and graph the following system of linear equations:

$x + y = 9$; $x - y = 7$



16. Write the following fractions in simplest form:

a) $\frac{(25x^6\ 36\ z^7)}{(50x^8\ 6z^5)}$

b) $\frac{(x^6 + 13x^5 + 42x^4)}{x^3\ (x + 6)}$

17. The sum of two consecutive even integers is 18. What are the integers?

The integers are _____ and _____

18. After you leave your house, you walk 10 blocks east and 6 blocks south. How far are you from your house?

I am _____ blocks from my house

19. The length of a rectangle is two more than the width. The area is 35. Find the length and the width (Hint: Let x be the width).

Width = _____ length = _____