



## Intermediate Algebra Summer Assignment 2021-2022 School Year

Directions: Complete the attached assignment.

**The Knox School**  
**Intermediate Algebra**  
**Summer Assignment**

Please complete all questions and follow all directions. It is recommended that you use separate sheets of paper for your work. Attach any work to the back of this packet.

**Evaluate the expression:**

1)  $5 - 3 + 12 - (-9) =$

2)  $48 \div (5 + 7) - 9 =$

3)  $\frac{3}{4} + \frac{1}{6} =$

4)  $\left(\frac{3}{5}\right)\left(\frac{7}{12}\right) =$

5)  $(-3)^0 =$

6)  $24 \cdot \frac{4}{3} =$

Solve for the variable each equation:

$$7) 3x - 5 = 13$$

$$8) -21 - 5z = 64$$

$$9) \frac{1}{4}d + 2 = 3$$

$$10) 18y - 21 = 15y + 3$$

$$11) 24 = \frac{5}{8}x + 4$$

Translate each verbal expression into an algebraic expression:

12) The sum of six times a number and twenty-five

13) Seven less than fifteen times a number

14) Four times the square of a number increased by five times the same number

Find the product:

$$15) (2x + 1)(x - 3)$$

$$16) (x^2 + 5x)^2$$

$$17) (x - 1)(x^2 + 2x - 3)$$

Simplify the expression:

$$18) b^7 \cdot b^{11}$$

$$19) \frac{b^{-3}}{b^7}$$

$$20) 4x + 7y - 14x + 2y$$

$$21) 20xy - 3x^2y - 10x^2y - 30xy$$

Evaluate the radicals. Leave in simplest radical form, no decimals:

$$22) \sqrt{18}$$

$$23) \sqrt{32x^3}$$

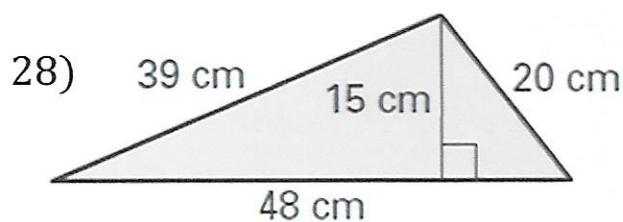
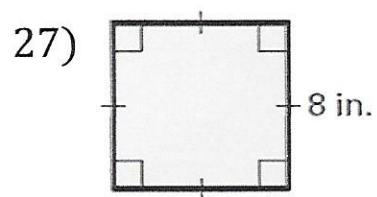
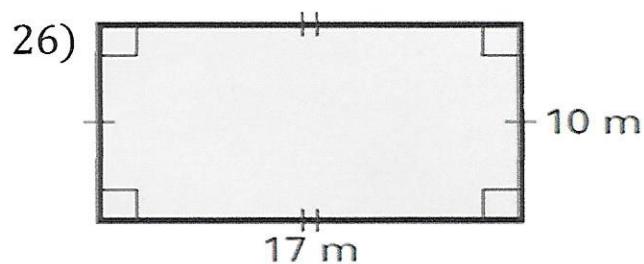
$$24) \sqrt{60x^2y^4}$$

Solve the linear system for both variables:

25)  $y = x + 2$

$$3x + 2y = 9$$

Find the perimeter and area for each polygon:



Determine if the table of values is a function or not. Explain:

29)

x	y
1	4
2	3
3	2
4	1

30)

x	y
4	-2
1	-1
0	0
1	1
4	2

Make a table of values for the function (Use  $-2 \leq x \leq 2$  for the domain):

$$31) y = 3x - 7$$

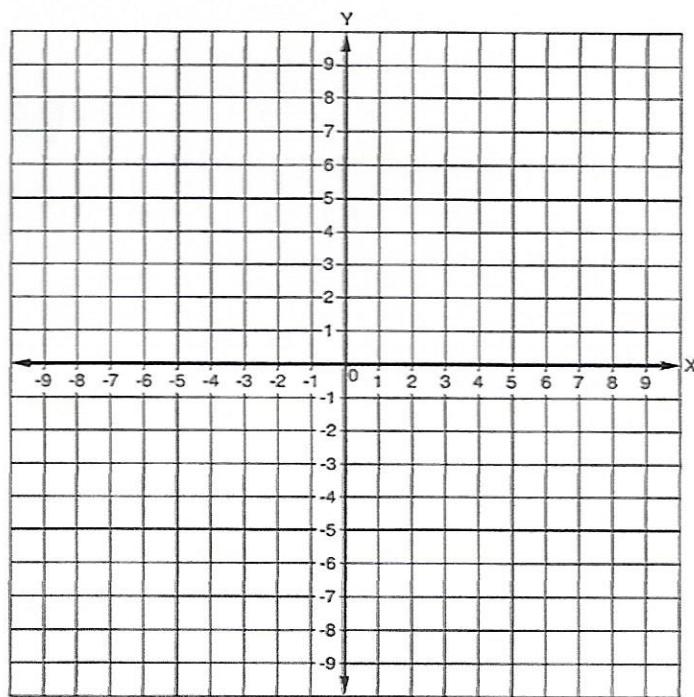
$$32) y = \frac{5}{2}x - \frac{1}{2}$$

x	y

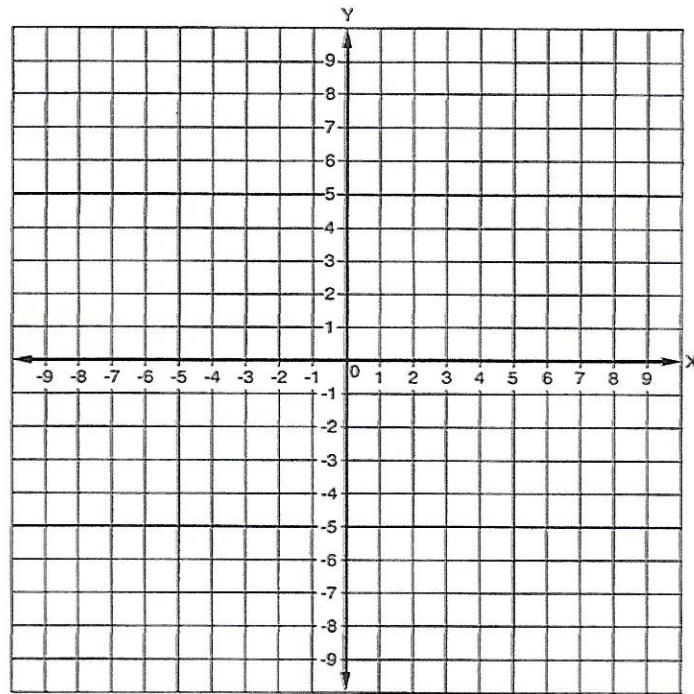
Graph the functions. Use the provided graph for your final work:

\*Complete and show all work by hand, do not use a calculator to graph the functions

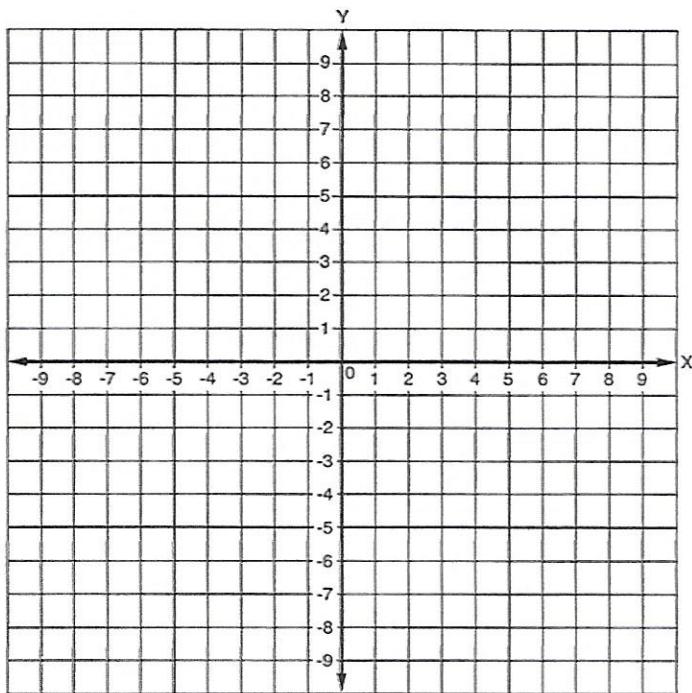
33)  $y = 3x + 2$



34)  $y = \frac{2}{3}x - 4$

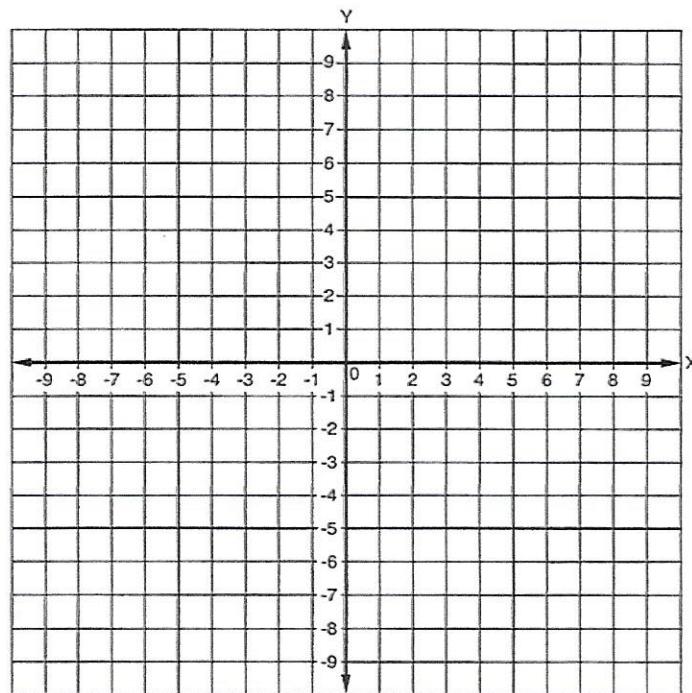


35)  $y = 2x^2$



Graph the system and identify the solution:

36)  $\begin{aligned} -x + y &= 3 \\ 3x - y &= 5 \end{aligned}$



Solve the quadratics using which ever method you would like:

$$37) \quad x^2 + 4x - 5 = 0$$

$$38) \quad x^2 - x - 12 = 0$$

$$39) \quad 2x^2 - 5x + 2 = 0$$

$$40) \quad x^2 - 9 = 0$$