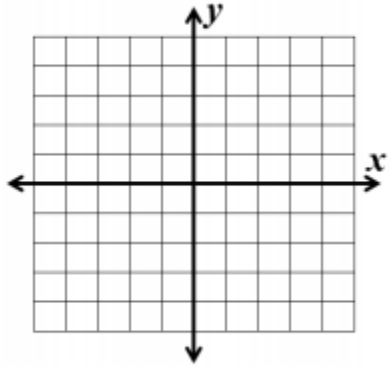
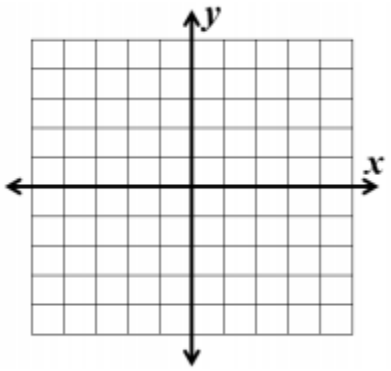
Algebra 2 Honors **Name**_____
WS: Summer Work Extra Practice **Date**_____**Block**_____

In 1 – 2, solve each system of equations by graphing.

1. $\begin{cases} y = \frac{3}{4}x - 2 \\ x = -4 \end{cases}$



2. $\begin{cases} 5x - 3y = -3 \\ 10x - 6y = 6 \end{cases}$



3. Create a system of equations for the following problem, but don't solve. Identify each variable's meaning.

   Mr. Brust likes to reward his students so he purchased 2 kinds of candy for a math game. He can't remember how many of each he purchased, but he does remember that the Chocolate Smoothies cost $0.50 each and the Super Pops cost $0.60 each. He purchased a total of 30 pieces of candy for $16.80.

   _____ = _____
   (variable) (what the variable represents)

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   Equation 1:

   Equation 2:

In 4 - 6, solve each system using substitution or elimination.

4. $\begin{cases} \frac{1}{2}y = x \\ 3x - 6y = 9 \end{cases}$

5. $\begin{cases} 4 - 2y = x \\ x + 9y = 11 \end{cases}$

6. $\begin{cases} -10x - 2y = -1 \\ y = -5x + 2 \end{cases}$

7. Is $(4x + 3)(2x – 7)$ the factored form of $8x^2 – 22x – 21$? Justify your answer by showing work.

In 8 – 13, factor the following. Check your answer by multiplying!

8. $5p^2 + 9p – 2$

9. $4n^2 – 17n + 4$

10. $25x^2 - 36$

11. $p^3 – 4p^2 – 3p$

12. $8n^2 – 34n + 8$

13. $12x^3 – 27x$

In 14 – 17, solve by facoring.

14. $6x^2 – x = 2$

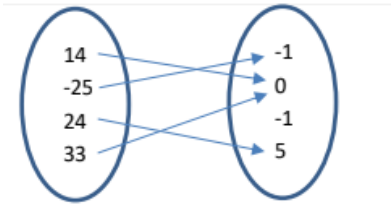
15. $3m^2 + 5m = 2$

16. $18x^2 = 2x^3 + 40x$

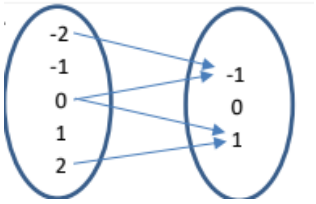
17. $5y^2 – 25y = 0$

Determine if the following are functions. For each function, state the domain and range. If it is not a function, explain why.

18.



19.



Let the functions $A(x) = 5x^2 - 2$, $B(x) = |x| + 2$, and $C(x) = \sqrt{x}$. Find the following.

20. $B(-2)$

21. $C(4) + A(3)$

22. $C(1) + C(100)$

23. Find x, if $A(x) = 43$

24. Give the domain of $C(x)$

25. Find x if $B(x) = 21$

Find the values using the graph.

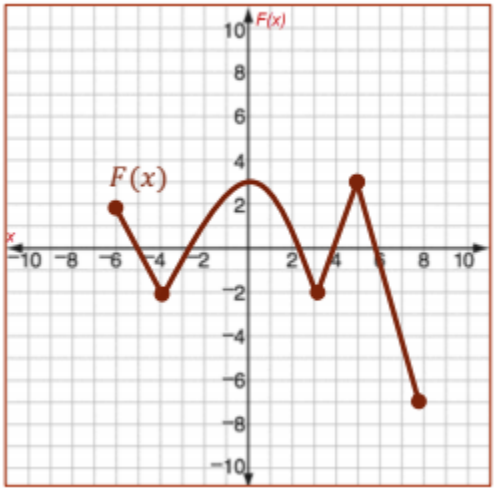
26. What is the range of $F(x)$?

27. $F(8) =$

28. If $F(x) = -4$, find x.

29. Where is $F(x)$ decreasing?

30. What is the maximum of $F(x)$?



31. x – intercepts:

32. y – intercept:

33. What is the domain of $F(x)$?

34. If $F(x) = 6$, find x.

35. Where does $F(x)$ have a constant rate of change?