

Advanced Math 1 Final Review Practice Problems

Chapter 1

Solve for the variable

1. $bc - ae = g$ solve for c

2. $-2y + 5 + 5y = 14$

3. $\frac{2b}{5} - \frac{3b}{4} = 3$

4. $-3|x - 7| + 6 = 12$

5. $7(4 - a) = 3(a - 4)$

6. Solve and graph on a number line

$$8 > -2 - 5y$$

7. Solve and graph on a number line

$$-5z - 3 < -13$$

8. $m = \frac{5}{dx} + e$ solve for x

9. The sum of three consecutive odd integers is 105. Find the middle of these three integers.

10. A movie club offers two plans. Plan A charges \$40 to sign up for the plan and \$8 for each movie ticket. Plan B charges \$67 to sign up for the plan and \$5 for each movie ticket. How many movie tickets would someone need to buy for the plans to have the same total cost?

Chapter 2

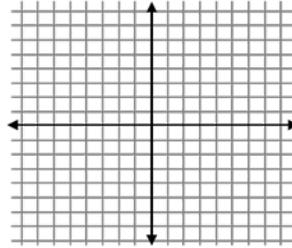
11. Find the slope of the line between the two points

a) $(-1, 1)$ and $(3, 9)$

b) $(4, 9)$ and $(6, 9)$

c) $(7, 4)$ and $(7, 6)$

12. Given $-3x + 12y = 24$, find the x and y intercepts and graph.



X int = (,) Y int = (,)

13. Given Through the points $(2, 1)$ and $(4, 9)$, find the equation of the line in point slope form

14. Given the line $y = \frac{1}{5}x - 3$, find the slope of the line that is

a. parallel to the line

b. perpendicular to the line

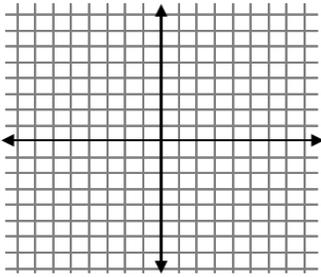
15. Find the equation of the line in point slope form that passes through the point $(4, 2)$ and is

a. parallel to the line $y = -3x+4$

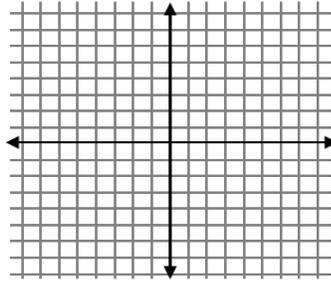
b. perpendicular to the line $y = -3x+4$

16. You are reading a book and you currently have 300 pages left to read. You are able to read 15 pages each hour. Write an equation that represents how many pages (y) you will have left to read after x hours. Use your equation to find how many hours until you have finished reading your book.

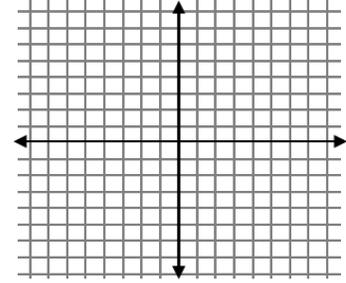
17. Graph $2x + 3y = 12$



18. Graph $y = -3x - 1$

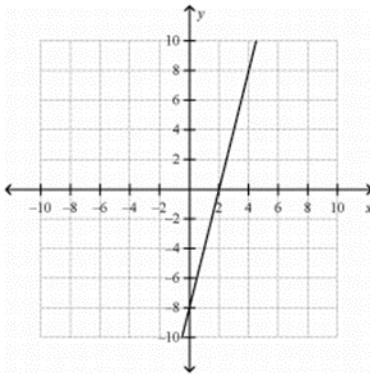


19. Graph $x = 4$

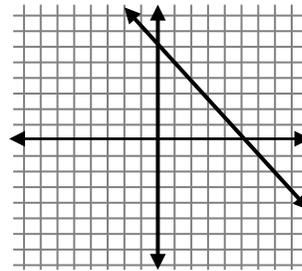


20. Find the equation of the line in slope intercept form

a.



b.



21. Given $4x + 2y = 10$, put in slope intercept form.

Chapter 3

22. Determine which sequences are arithmetic or geometric and the common difference or ratio

a. 44, 40, 36, 32,..... Arithmetic/geometric? _____ d or r = _____

b. 2, 6, 18, 54, 162,..... Arithmetic/geometric? _____ d or r = _____

c. 4, -8, 16, -32, 64,..... Arithmetic/geometric? _____ d or r = _____

d. -5, 0, 5, 10, 15,..... Arithmetic/geometric? _____ d or r = _____

Given 3, 9, 15, 21, 27, Find

23a. the recursive formula

23b. the explicit formula

23c. a_{75}

Given 3, -12, 48, -192, Find

24a. the recursive formula

24b. the explicit formula

24c. a_{19}

25. Given $a_1 = -7$ and $a_n = a_{n-1} + 5$, find the explicit formula

26. Given $a_n = 4n - 7$, find the recursive formula

Tell how $g(x)$ is transformed from $f(x)$.

27. Given $f(x) = 3x + 1$
and $g(x) = 3(x + 6) + 4$

28. Given $f(x)$ and
 $g(x) = f(x - 2) + 5$

29. A hot air balloon is currently at a height of 900 feet. The balloon is descending by 10 feet minute. Find a function for the balloon's height after x minutes

30. $f(x) = 6x + 5$, find $f(-4)$

31. Create a table that

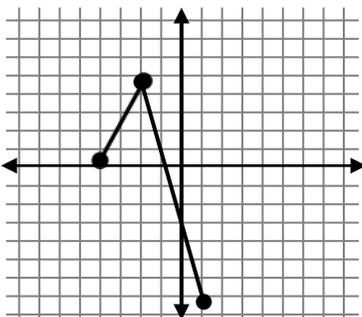
a. is a relation but NOT a function

b. is a function

32. Given the graph, find the

a. Domain

b. Range

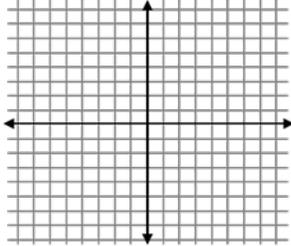


Chapter 4

Solve the system of equations by graphing

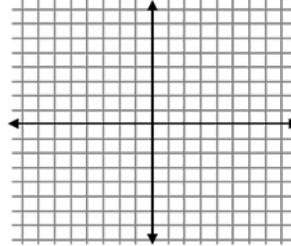
33. $y = -2x - 4$

$$y = \frac{1}{2}x + 6$$



34. $y = 3x + 2$

$$2y = 6x + 4$$



Solve by either elimination or substitution.

35. $2x + 3y = 12$

$$5x - y = 13$$

36. $x + 4y = 16$

$$y = -2x - 3$$

37. $3x + 4y = 10$

$$x = 2y - 6$$

38. $3x + 2y = -5$

$$5x + 3y = -6$$

39. A water tank currently has 130 gallons of water and is being filled by 10 gallons every hour. A second water tank currently has 280 gallons of water and is being drained by 5 gallons every hour. After how many hours will the two tanks have the same amount of water? Show your equations.

Chapter 4

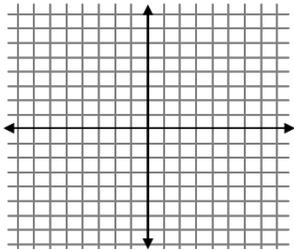
40. A school is planning field trip for 296 people. Buses can carry 40 people and vans can carry 12 people. The number of vans being used is 3 more than the number of buses. How many vans and buses are being used for the trip. Show your equations.

41. You have \$5.10 in nickels and dimes. The number of dimes is 3 more than the number of nickels. How many of each coin do you have? Show your equations.

Graph and shade the solution to each system of inequalities:

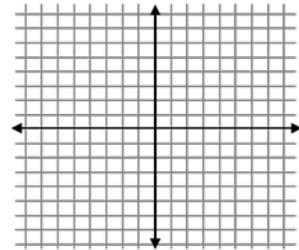
42. Find the solution to the inequality.

$$y > \frac{-3}{2}x + 6$$



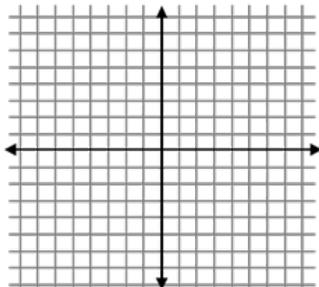
43. Find the solution to the inequality.

$$4x - 2y \geq 12$$



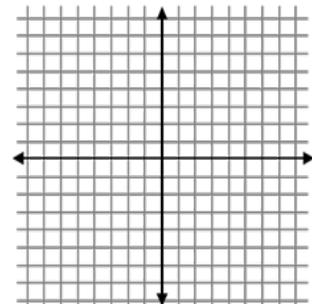
44. $y < -3x + 2$

$$y > 2x - 1$$



45. $-2y \leq -4x + 2$

$$y \leq -3x + 4$$



44b. Determine if (2,4) is the solution to the system solution to the system

45b. Determine if (0,2) is the

Chapter 5

46. $2^{x+3} = 16^{2x-1}$

47. Given $f(x) = (3)^{x-1} + 4$,

- How is this function translated from its parent function?
- Find the domain
- Find the range
- Find the asymptote

48. A house valued at \$450,000 increases in value by 9% each year.

- Find the value of the house after 8 years.
- Estimate the number of years when the house will reach over TWO million dollars.

49. A Rolls Royce cost \$500,000. It depreciates at a rate of 13% a year.

- What is it worth after 6 years?
- In about how many years will the car be worth less than \$45,000. Show all relevant equations and work.

Chapter 6

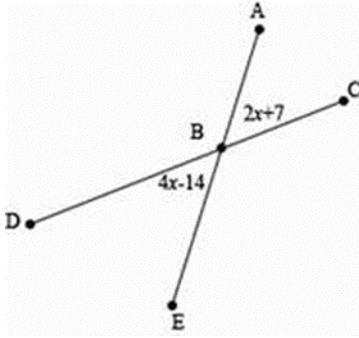
Use the following points A (-3, -8) and B (8, 12) for #50 -52.

50. Find the midpoint of \overline{AB} .

51. Find the exact value of AB.

52. Find the point that is $\frac{2}{5}$ of the way to AB.

Use the figure below to solve 53-55.



53. Find $m\angle ABC$

54. Find $m\angle DBE$

55. Find $m\angle ABD$

Given the conditional statement, find a counterexample for # 56-58

56. If a number is divisible by 2, then it is also divisible by 3.

57. If a number is raised to the 3rd power, the result is negative.

58. If an integer is squared, the result can be negative.