

Directions: Show all work. Place answer on the blank line next to problem number.

Evaluate the expressions.

_____ 1. $x^4 - 3x^3$, when $x = 2$

_____ 2. $4r^2 + 3s$, when $r = 2$, $s = 3$

_____ 3. $(3x + 2y)^2$, when $x = 4$, $y = 2$

_____ 4. $\frac{(a - 2b)}{4}$, when $a = 10$, $b = 2$

Simplify the expressions. Use order of operations.

_____ 5. $8 \div 2 + 13 - 7$

_____ 6. $\left[27 \div (1 + 2)^2 \right] + 5$

_____ 7. $\frac{1}{2} + 2\left(\frac{1}{4}\right) - \frac{1}{3}$

_____ 8. $\frac{5(3 - 1)^2}{3^2 - 5 + 6}$

Check to see if the given value is a solution to each equation or inequality - show all work and answer YES or NO.

_____ 9. $4x - 3 = x + 7$, when $x = 3$

_____ 10. $4(x^2 - 5) \leq 20$, when $x = 3$

_____ 11. $x - 3 \geq 24 - 2x$, when $x = 9$

Translate into an algebraic expression, equation or inequality.

_____ 12. Four times the difference of 3 and a number is five.

_____ 13. Three times the sum of a number and six is equal to seven.

_____ 14. Two increased by eight times a number is greater than fifteen.

_____ 15. Twenty less than the product of five and a number, is less than six.

_____ 16. The difference of a number and four divided by two.

_____ 17. The quotient of seven and a number.

_____ 18. Amount of money you earn per hour if you make d dollars in 15 hours.

_____ 19. The total cost for 4 people to ride the bus if the fare of \$0.75 is increased by d dollars

_____ 20. The total width of a picture with its frame if the picture is 12 inches wide and the frame is x inches wide.

You are setting up a children's painting class. Poster board paints cost \$3.80 for each child, and a package of 100 sheets of poster board costs \$66.50. Assuming that you only need 1 package of poster board, find the total cost of supplies if 18 students sign up for the class.

21. Choose variable _____

22. Write equation _____

23. Solve equation

24. Answer question _____

You are traveling 150 miles to your cousin's house. You travel at a rate of 50 miles per hour. When will you get to your cousins house?

25. Choose variable _____

26. Write equation _____

27. Solve equation

28. Answer question _____

You installed a bookshelf on the wall to organize some of your books. The books that you absolutely want on the shelf weigh a total of $6\frac{3}{4}$ pounds. The bookshelf can handle no more than 9 pounds. You plan on filling the rest of the shelf with your paperbacks that each weight about $\frac{1}{8}$ pound. Assuming you won't run out of room, how many paperback books can you add to the shelf?

29. Choose variable _____

30. Write equation _____

31. Solve equation

32. Answer question _____

Tell whether the pairing is a function. Write YES or NO.

_____33.

Input	Output
2	1
4	1
6	5
8	7

_____34.

Input	Output
0	3
0	4
1	5
2	6

For numbers 35-36:

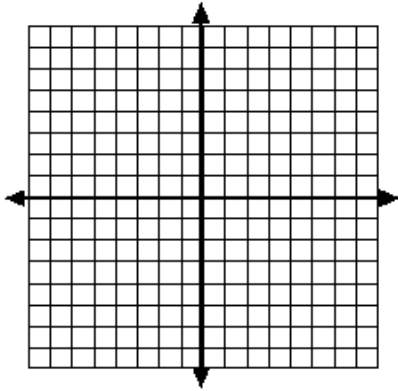
a) Make a table

b) Graph the function

c) Identify the range

35. $y = \frac{1}{2}x + 3$ given domain: 0, 2, 4, 6, 8

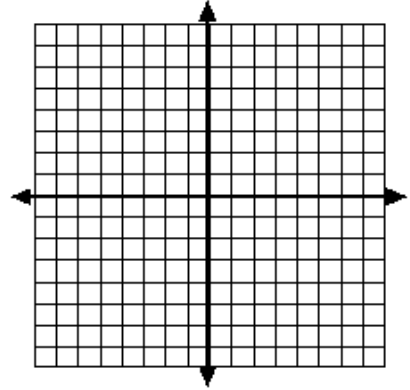
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Range: _____

36. $y = 3x - 2$ given domain: -2, -1, 0, 1, 2

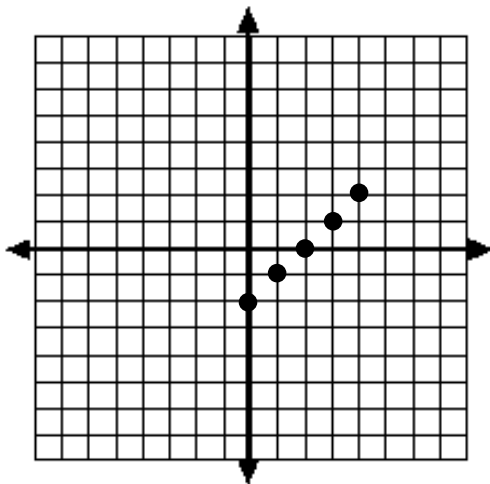
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Range: _____

For number 37 write a rule for the function represented by the graph. Identify the domain and range.

37.



Rule: _____

Domain: _____

Range: _____