Name: _____

Date: _____ Grade: _____

Intermediate Math Skills

CHAPTER 4 TEST

Congratulations on completing this chapter! ***Answer the following questions to test your understanding of the material. When you finish, hand in your test to your teacher for a final grade. Each answer is worth 1.7 points.***

Select or supply the correct answers.

1. _____ (Real, Whole) numbers consists of two main groups of numbers, *irrational* and *rational*.

2. A collection of objects is known as a(n) _____.

3. _____ (Whole, Integers, Irrational) numbers are members of the set {0, 1, 2, 3, 4, …}.

4. _____ (Whole, Integers, Irrational) are members of the set {…-3, -2, -1, 0, 1, 2, 3, …}.

5. Numbers such as $\sqrt{2}$, $\sqrt{3}$, $\sqrt{7}$ and π are examples of _____ (whole numbers, integers, irrational numbers).

6. $^{45}/_{0}$ is _____

7. $2\sqrt{3} \bullet 2\sqrt{5} \bullet 3\sqrt{2} =$ _____

Match the sets of numbers with the numbers (8-11).

8. _____ -55 (a) Real, Rational

9. _____ 9 (b) Real, Irrational

10. _____ $^{2}/_{5}$ (c) Real, Rational, Integers, Whole Numbers

11. _____ $\sqrt{21}$ (d) Real, Rational, Integers

Rationalize the denominators (12-14).

12. $\frac{9}{\sqrt{3}} =$ _____

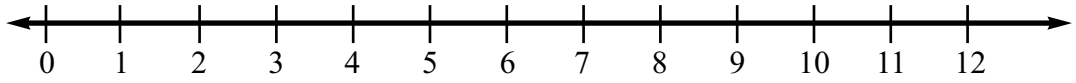
13. $\frac{8(19-16)+15}{13\sqrt{11}} =$ _____

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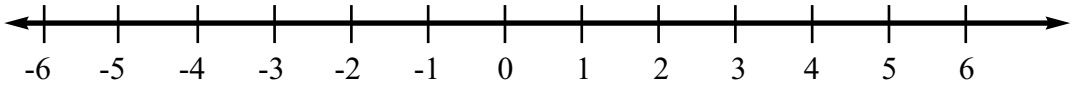
14. $\frac{5(18-13)-15}{\sqrt{5}} =$ _____

Graph the following inequalities on the number lines provided.

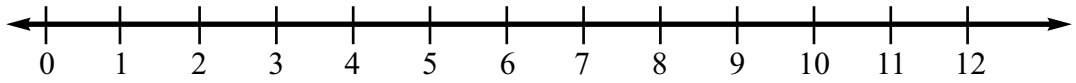
15. $x > 0$



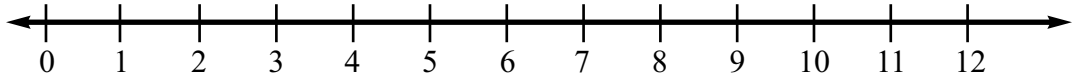
16. $x < -1$



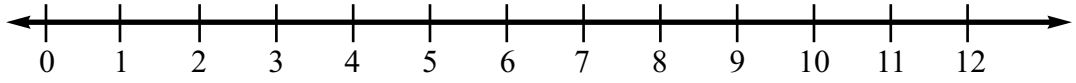
17. $x \geq 2$



18. John has the same or more money than does Tommy. On the number line below, graph that which represents how much money John could have if Tommy has $10.00.

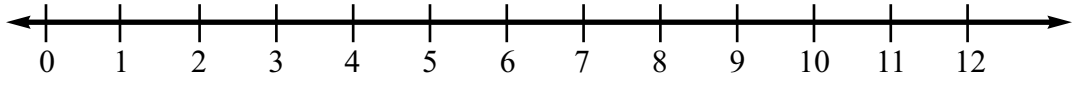


19. Graph the solution to $10x + 5 < 25$ on the number line below.

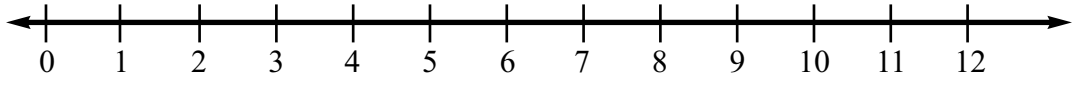


Solve the following inequalities for *x* and graph the solutions on the number lines (20-22).

20. $8x + 1 > 41$

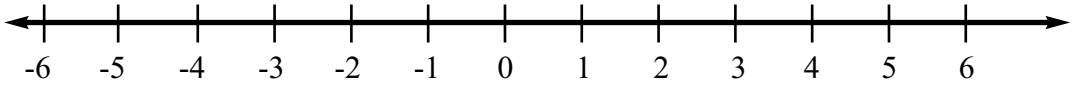


21. $4x - 6 \leq 30$



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22. $9x - 27 \leq 6x - 39$



23. In 5 years Charles will be at least as old as Tommy. Tommy will be 25 years old at that time. Charles' age at this time is *greater than or equal to* _____.

Solve the following inequalities for *x*. Show your work. Write your answers on the blanks.

24. $-3x - 7 > 20$ $x =$ _____

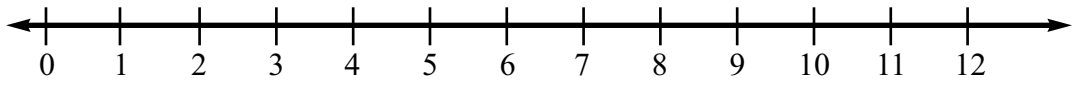
25. $\frac{2[3(5-2)+1]x}{-4} > 10$ $x =$ _____

26. $\frac{-4x}{4[2(9-8)]} \geq \frac{5(6-2)}{2(14-4)}$ $x =$ _____

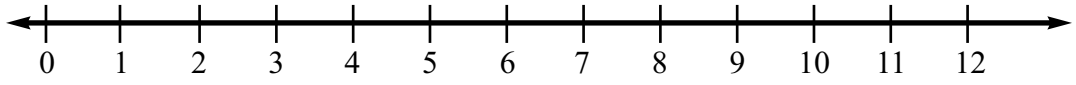
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Graph the following inequalities defined by the interval given in each question (27-29).

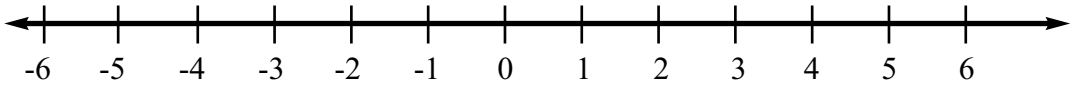
27. $4 < x < 7$



28. $x > 1$



29. $-1 \leq x \leq 3$

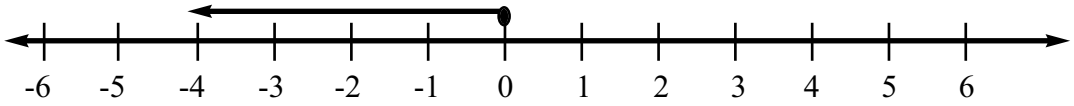


30. Determine if the following interval shown is an open, half-open or closed interval.

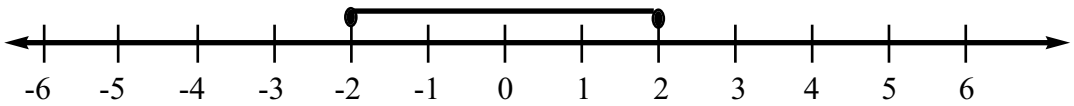
$225 < 25x \leq 1500$ _____

Determine if the graphs of the intervals shown below for numbers 31-32 are open, half-open or closed intervals.

31. _____

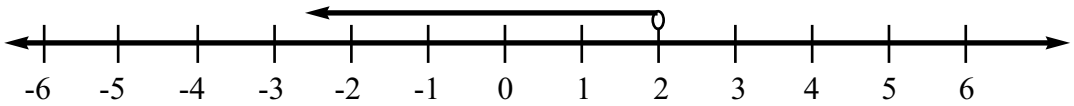


32. _____



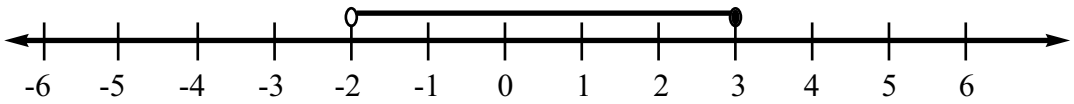
Look at the graphs and express the intervals shown in set-builder notation for numbers 33-35.

33. _____

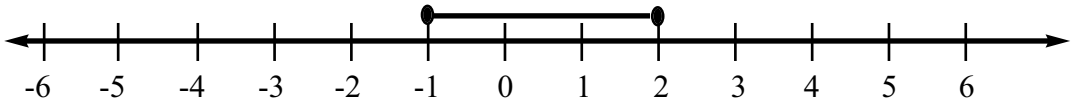


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34. _____

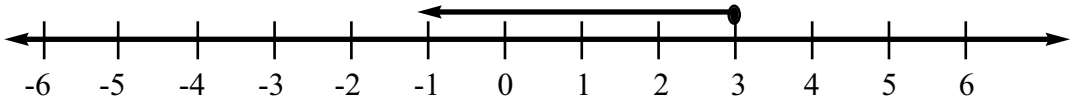


35. _____

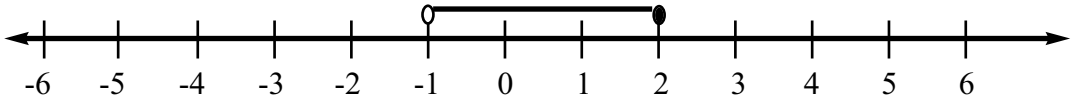


Look at the graphs and express the interval shown in interval notation for numbers 36-37.

36. _____



37. _____



Solve the combined inequalities for numbers 38-39. Show your work in the space provided. Express the solution for number 38 in set-builder notation and the solution for number 39 in interval notation on the blank.

38. $32 < 4x \leq 48$ _____

39. $55 \leq 5x + 20 \leq 95$ _____

40. The absolute of |-19| = _____.

Simplify the following expressions containing absolute value symbols. Write the answers on the blanks.

41. 3 |17| = _____

42. 4 |17 - 13| - 5 = _____

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Use the distance formula to calculate the distance between the points. Be sure to show your work. Write your answer on the blank.

43. (3, 8), (3, 6) _____

44. (-1, 1), (-3, 0)_____

45. Determine the coordinates of the midpoint of the line segment between the points in each problem below. Show your work and write the answer on the blank.
(20, 42), (40, 6) _____

Choose the best meaning for each Life Principle and write the letter of the response on the blank.

46. *"An absolute of great value is truth."* _____
(a) If you are truthful, you will be rich.
(b) Truth is one of the absolutes and it will be a great benefit to you.
(c) Values are absolute, truth is great.
(d) Truth is just like money.

47. *"A wise man builds on a firm foundation."* _____
(a) When building a foundation, you should use concrete.
(b) Wise men do a lot of construction.
(c) A good foundation is the best place on which to build your life.
(d) Foundations and wise men are the same thing.

48. *"Positive or negative choices always equal positive and negative consequences."* _____
(a) Positive and negative are always equal.
(b) There are consequences to our decisions.
(c) Consequences are always negative.
(d) "Always" means sometimes.

49. *"Morality consists of drawing behavioral lines we refuse to cross."* _____
(a) Our moral standards are not negotiable.
(b) Morality is not worthwhile.
(c) Life is refuse but we can draw lines.
(d) Drawing lines is a very worthwhile venture.

50. *"The company you keep equals the trouble you meet."* _____
(a) It is troublesome to keep a company.
(b) If the group you are with gets into trouble, you will be in trouble also.
(c) Trouble and company go together.
(d) The "company you keep" is an insurance company.

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