

# Honors Algebra 1 Midterm Study Guide

## Mr. Burns

Find the next three (3) terms in the sequence.

1. 1, 6, 11, 16, 21,...
2. 2, 5, 10, 17, 26,...
3. 7, 6, 4, 1, -3,...

Find the  $n$ th and 20<sup>th</sup> term in the sequence.

4.

1	2	3	4	5	Nth	20
3	7	11	15	19		

Suppose that the cost to order baseball tickets is \$14 per ticket plus \$1.25 handling charge per order (regardless of how many tickets were ordered).

5. How much does an order of 6 tickets cost?

\_\_\_\_\_

6. Let  $t$  represent the number of tickets, and write an equation for the cost,  $c$ , of an order of tickets.

\_\_\_\_\_

7. Write an example of the Associative Property of Addition.

Give an example of a number that would satisfy these rules. (2 pts each)

8. A number that is whole and counting. \_\_\_\_\_

9. A number that is an integer but not natural. \_\_\_\_\_

10. A number that is rational, but not an integer. \_\_\_\_\_

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11. Match the following properties with the correct example. One extra. (2 pts each)

\_\_\_\_\_ Commutative Property

a.  $8(30 + 2) = 240 + 16$

\_\_\_\_\_ Associative Property

b.  $a \geq b, b \geq c, \text{therefore}, a \geq c$

\_\_\_\_\_ Identity Property

c.  $6 \times \frac{1}{6} = 1$

\_\_\_\_\_ Distributive Property

d.  $(2 + 3) + 6 = 6 + (2 + 3)$

\_\_\_\_\_ Transitive Property

e.  $6 + (1 + 8) = (6 + 1) + 8$

f.  $a \times 1 = a$

g.  $-11 + 11 = 0$

Let  $x = -1$ ,  $y = -4$ ,  $z = 3$ . Evaluate each expression. (2 pts each)

12.  $|y - x| + x$

13.  $x + z^2 \cdot y$

14.  $\frac{xyz}{z - y}$

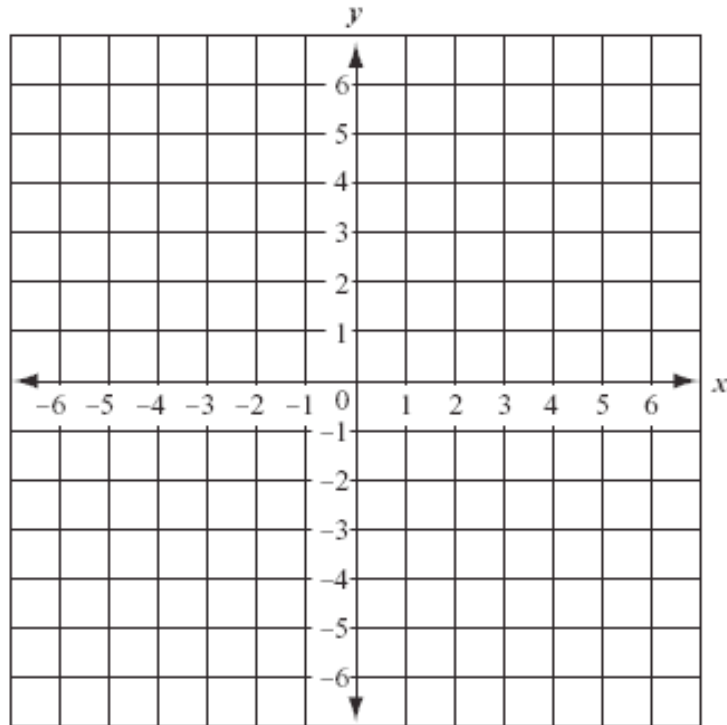
15. Complete the table for the following equation.  $y = -4 - |x + 2|$  (5 pts.)

X	-3	-2	-1	0	1	2	3
y							

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16. Graph the absolute value equation. (5 pts.)



Solve each equation.

17.  $t - 12 = -21$

18.  $\frac{5}{8} = -\frac{2}{7} + r$

19.  $6h = 36$

20.  $\frac{t}{15} = 4$

21.  $-4 = 2 + \frac{x}{6}$

22.  $-(x - 2) = -16$

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23. Solve for the indicated variables.

a.  $5m - 1 = n$ , for m

b.  $\frac{3b}{c} = d$ , for b

c.  $6 - \frac{p}{g} = r$ , for p

A science class broke into 5 groups to determine what the boiling point of water is. Here are the results:

Group 1:  $102^{\circ}\text{C}$

Group 2:  $96^{\circ}\text{C}$

Group 3:  $98^{\circ}\text{C}$

Group 4:  $102^{\circ}\text{C}$

Group 5:  $101^{\circ}\text{C}$

24. What are mean, median, mode, and range and average deviation of the class data?

Mean= \_\_\_\_\_

Median= \_\_\_\_\_

Mode= \_\_\_\_\_

Range= \_\_\_\_\_

Average Deviation= \_\_\_\_\_

25. Determine whether each set of ordered pairs is a function. Describe the domain and range for each.

a.  $\{(3,4), (3,6), (5,14), (7,14)\}$

Function? \_\_\_\_\_

Domain= \_\_\_\_\_

Range= \_\_\_\_\_

b.  $\{(4,12), (5,18), (7,12), (8,19)\}$

Function? \_\_\_\_\_

Domain= \_\_\_\_\_

Range = \_\_\_\_\_

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26. What Greek letter is  $\Delta$  \_\_\_\_\_
27. What does it mean? \_\_\_\_\_
28. Write the slope formula using this symbol:

Find the slope of the line between the given points.

29. (2,4)(6,10)
30. (0,-1)(3,8)
31. (3,5)(6,5)
32. (-2,7)(-2,-5)

33. If y varies directly as x and  $y=54$ , when  $x=9$ .....
- a. Show how you find the constant of variation
  - b. What is the equation of variation
  - c. If  $y=24$ , what is the value of x?

34. If y varies inversely as x and  $x=8$  when  $y=3$ .....
- a. Show how you find the constant of variation
  - b. What is the equation of variation
  - c. If  $x=12$ , what is the value of y?