

Key.

Honors Algebra 1 Midterm Study Guide

Mr. Burns

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

1. 1, 6, 11, 16, 21, ... 26, 31, 36

2. 2, 5, 10, 17, 26, ... 37, 50, 65

3. 7, 6, 4, 1, -3, ... -8, -14, -21

Find the n th and 20th term in the sequence.

4.

1	2	3	4	5	Nth	20
3	7	11	15	19	<u>$4n - 1$</u>	<u>79</u>

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?

\$ 85.25

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

$C = 14t + 1.25$

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

$(a + b) + c = a + (b + c)$

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

8. A number that is whole and counting. any pos. #

9. A number that is an integer but not natural. any neg. or 0

10. A number that is rational, but not an integer. any fraction
or
ending/rep decimal.

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

d Commutative Property

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

e Associative Property

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

f Identity Property

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

a Distributive Property

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

b 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. $|y-x|+x$ $|-4+1|+--1 = 2$

13. $x+z^2 \cdot y$ $(-1)+(3)^2 \cdot (-4) = -37$

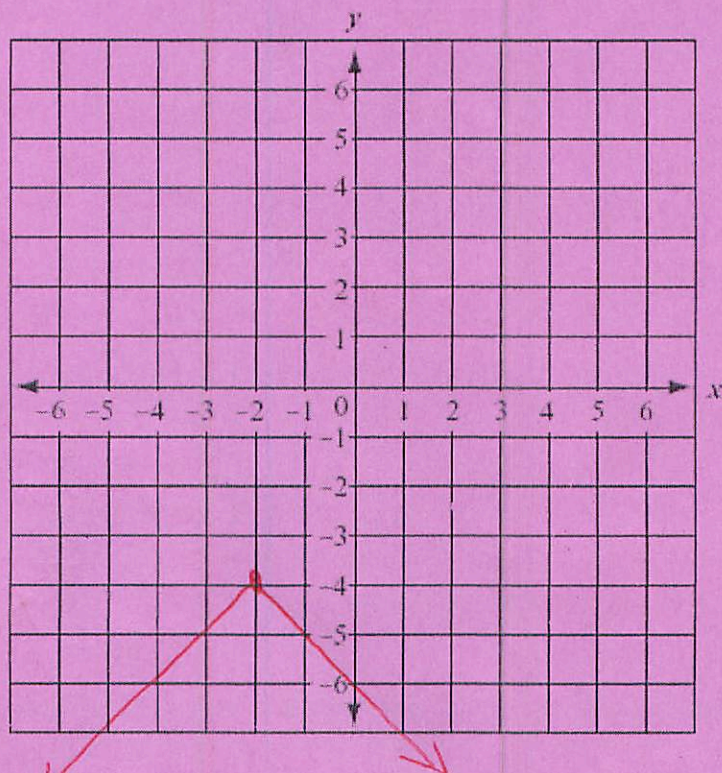
14. $\frac{xyz}{z-y}$ $\frac{(-1)(-4)(3)}{3-(-4)} = \frac{12}{7}$

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

X	-3	-2	-1	0	1	2	3
y	-5	-4	-5	-6	-7	-8	-9

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



Solve each equation

17. $t - 12 = -21$

$t = -9$

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

$\frac{35 + 16}{56} = \frac{51}{56} = r$

19. $6h = 36$

$h = 6$

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

$t = 60$

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

$36 = x$

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

$x = 18$

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23. Solve for the indicated variables.

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

$$m = \frac{n+1}{5}$$

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

$$b = \frac{cd}{3}$$

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

$$p = -g(r-6)$$

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

96, 98, 101, 102, 102

Group 1: $102^{\circ}\text{C} - 99.8 = 2.2$
 Group 2: $96^{\circ}\text{C} - 99.8 = -3.8$
 Group 3: $98^{\circ}\text{C} - 99.8 = -1.8$
 Group 4: $102^{\circ}\text{C} - 99.8 = 2.2$
 Group 5: $101^{\circ}\text{C} - 99.8 = 1.2$
 $\Sigma = 499$
 $\bar{x} = 99.8$

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

Mean = 99.8°

Median = 101°

Mode = 102°

Range = 6°

Average Deviation = ± 2°C

$$\Sigma(\bar{x}) = \frac{11.2}{5} =$$

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? No

Domain = {3, 5, 7}

Range = {4, 6, 14}

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

Function? Yes

Domain = {4, 5, 7, 8}

Range = {12, 18, 19}

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26. What Greek letter is Δ delta
27. What does it mean? change in
28. Write the slope formula using this symbol:

$$m = \frac{\Delta y}{\Delta x}$$

Find the slope of the line between the given points.

29. (2,4)(6,10) $\frac{10-4}{6-2} = \frac{6}{4} = \left(\frac{3}{2}\right)$

30. (0,-1)(3,8) $\frac{8+1}{3-0} = \frac{9}{3} = (3)$

31. (3,5)(6,5) (0)

32. (-2,7)(-2,-5) (ϕ)

33. If y varies directly as x and y=54, when x=9.....

- a. Show how you find the constant of variation

$$K = 54/9 \quad K = 6$$

- b. What is the equation of variation

$$y = 6x$$

- c. If y=24, what is the value of x?

$$24 = 6(x)$$

$$x = 4$$

$$y = Kx$$

$$K = y/x$$

34. If y varies inversely as x and x=8 when y=3.....

- a. Show how you find the constant of variation

$$K = yx \quad K = 8 \cdot 3 \quad K = 24$$

- b. What is the equation of variation

$$y = 24/x$$

- c. If x=12, what is the value of y?

$$y = 24/12 \quad y = 2$$

$$y = K/x$$