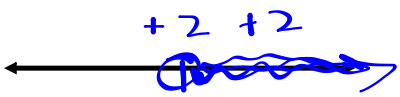
Warm up back of 21

Solve and graph the solutions.

$x - 2 > 5$

$+2 \quad +2$

$x > 7$



$3x + 1 \leq 10$

$3x \leq 9$

$x \leq 3$

$-2x \geq 14$

-7

$\frac{x}{2} < 4$ (2)

$x < 8$

homework

What Did the Math Teacher Say to the Student Who Missed All the Problems About Smashing Tomatoes?

Draw a line connecting each inequality to the inequality that describes its solution set. The line will cross a number and a letter. Write the letter in the corresponding numbered box at the bottom.

1. $-3x + 2 \leq 14$
2. $2x - 5 > -11$
3. $-9x - 4 \geq 50$
4. $\frac{x}{3} + 8 < 10$
5. $-\frac{x}{10} + 2 > 9$
6. $-\frac{x}{7} - 4 \leq -7$
7. $6 + 15x < -54$
8. $\frac{x}{2} + 7 \geq -11$
9. $12 - 5x \leq 52$
10. $-30 + \frac{x}{4} > -18$
11. $5 - \frac{x}{6} \geq 9$
12. $-6 + 7x < -20$
13. $-13x - 1 > -40$
14. $\frac{x}{12} + 8 \leq 3$
15. $-9 - \frac{x}{9} < 2$
16. $15 - x \geq 60$
17. $-\frac{x}{3} + 4 > -8$
18. $5x + 100 \leq 0$

- $x \leq -6$
- $x > 48$
- $x < -70$
- $x \geq -4$
- $x < -2$
- $x \leq -45$
- $x > -3$
- $x \leq -60$
- $x \geq 21$
- $x \leq -20$
- $x \geq -36$
- $x > -99$
- $x < 6$
- $x \geq -8$
- $x \leq -24$
- $x < 36$
- $x < 3$
- $x < -4$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

$15 - x \geq 60$

$-15 \quad -15$

$-1x \geq 45$

$\frac{-1x}{-1} \geq \frac{45}{-1}$

$x \leq -45$

IXL 6th Grade

AA.1 → AA.5

Inequalities

Advanced Math 6 Unit 4 Test Review

1. Look at the numbers below.

   4, 12, 20, 28, ...

   What is the 7^{th} term in the sequence?

2. Choose all that describe the following sequence. You must choose all that apply.

   25, 5, 1, 1/5, ...

   a. Arithmetic sequence
   b. Geometric sequence
   c. Each term is found by multiplying the previous term by 5
   d. Each term is found by multiplying the previous term by 1/5
   e. Has a common ratio
   f. Has a common difference

3. The table below shows the purity measure of water each time the water is filtered through a tank.

Water Purity

Number of times through filter	% Pure
1	70
2	75
3	80
4	85

Based on the date, how many times does the water need to go through the filter to reach 95% purity?

4. The chart below shows the relationship between the number of pencils purchased and the cost of the pencils?

Number of pencils	Cost of pencils
5	$0.60
10	$1.20
15	$1.80
20	$2.40

What is the total cost of 50 pencils?

5. The list of numbers below follows an arithmetic pattern

   12, 8, 4, 0

   If the pattern continues, which statement is true?

   a. The next term will be less than 1
   b. The next term will be a fraction
   c. The next term will be 0
   d. The next term will be 4

6. What is the value of x in this number sentence

   $2x = 96$

7. Solve for p

$p - 3.8 = 16$

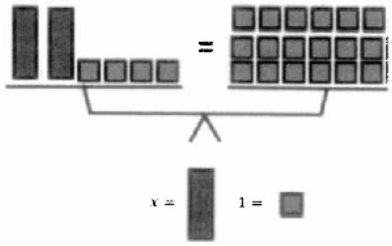
8. Which of the following would be classified as an equation?

a. $5 + 4y$
b. $x - 1 = 7$
c. $4 + k$
d. $3a - c$

9. What is the value of k when

$46 = 16 + k$

10. What is the value of x?



11. Which of the following in the variable in:

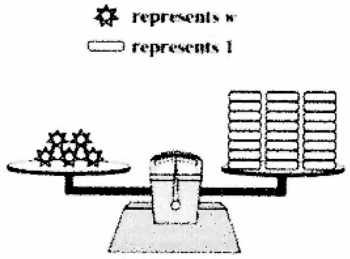
$3 + x = 45$

a. 3
b. x
c. =
d. 45

12. What is the value of y?

$\frac{y}{4} = 3$

13. If the scale is balanced, what number sentence does it represent?



14. Using the equation, $7x - 5 = 40$, identify the coefficient.

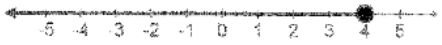
15. Which method could be used to solve the number sentence shown.

$$x - 4 = 16$$

a. Add 4 to x-4, and add 4 to 16
b. Subtract 4 from x, and subtract 16 from 16
c. Divide x by 4, and divide 16 by 16
d. Divide x by 4, and divide 16 by 4

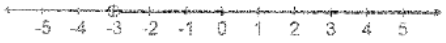
16. Write two inequalities to represent this graph

17. What inequality is shown on the following graph?



18. Draw the graph of: $-2 < y$

19. Using the graph below select all the numbers that are a solution to the inequality. You must select all correct answers.



a. -3
b. -2
c. -4
d. 1
e. 7
f. -5
g. 9
h. -7

20. Draw a graph to represent the solution set to this inequality

$$t - 5 < 7$$

21. What inequality is represented by the sentence below:

"You must have at least 4 letters of recommendation to apply to college"

22. Which equation is $y = 8$ a solution?

a. $y + 7 = 0$
b. $y + 3 = 10$
c. $y - 1 = 7$
d. $y - 6 = 0$

23. Match each property to the correct example.

Answer Choices
A. Commutative Property of Addition
B. Multiplicative Inverse Property
C. Multiplicative Property of Zero
D. Additive Identity Property
E. Distributive Property
F. Multiplicative Identity Property
G. Associative Property of Multiplication

24. Match each choice

Questions
1. Arithmetic Sequence Pattern
2. Geometric Sequence Pattern
3. Arithmetic Variable Expression
4. Geometric Variable Expression
5. Which type of sequence has a common ratio?
6. Which type of sequence has a common difference?

Answer Choices
A. 64, 16, 4, 1, $\frac{1}{4}$...
B. 1, 4, 9, 16, 25...
C. 112, 64, 16, ...-32...
D. $\frac{1}{4}n$
E. $n + (-48)$
F. $n - (-48)$
G. Arithmetic Sequence
H. Geometric Sequence

25. Evaluate:

$\frac{1}{2}x + 4 = 10$

26. A taxi company charges a flat fee of $4.00 for a ride and $0.75 per mile. If John paid a total of $11.50 for the ride, how many miles did he travel?

27. Choose all of the following that are NOT examples of expressions. You must select all correct answers.

a. $-14x$
b. $3x + 12 = 21$
c. Ab/c
d. $x + 3 > 10$
e. $2p + 6$
f. $12 + ab / x$

28. Translate the following:

"Three less than the product of six and a number is fifteen."

29. Which of the following represnet the algebraic expression below?

$x/-3 - 8$

a. Eight more than the quotient of a number and negative three.
b. Eight less than a number divided by negative three
c. The quotient of negative three and a number increased by eight.
d. Eight more than a number divided by three

30. Evaluate the following inequality

$-5x < 25$

31. Graph the following inequality

$10 > x/-5$

32. Between which two steps shows the multiplicative inverse property?

Problem: $\left(\frac{1}{2}x + 3\right) \cdot 1 = 19 \cdot 0$

Step 1: $\frac{1}{2}x + 3 = 19 \cdot 0$

Step 2: $\frac{1}{2}x + 3 = 0$

Step 3: $\frac{1}{2}x + 3 - 3 = 0 - 3$

Step 4: $\frac{1}{2}x = -3$

Step 5: $2\left(\frac{1}{2}x\right) = -3 \cdot 2$

Step 6: $x = -6$