UNIT 5 REVIEW TEST

Expressions Equations Inequalities

Name _____

- Evaluate
- Translate
- Combine
- Distribute
- Factor
- Solve 1 Step Eq. w/ inverse operations
- Write + Solve Equations (WP)
- Write + Graph Inequalities
- Check Solutions

Math 6
Period _____

Test Date: Thursday, January 16th

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You are responsible for the information taught in class and on homework. Remember that mathematics is a subject that spirals (it builds upon itself), so keeping up with concepts as we go is very important. Good Luck!

(I) Can you identify the parts of an expression?

$$8a + 3b - 27 + 2c$$

Coefficients 8, 3, 2 operations +, −

Constants 27 variables a, b, c

How many terms are in the given expression? 4

(II) Substitute values and solve.

1.

m	m + 12
5	5 + 12 = 17
10	10 + 12 = 22
20	20 + 12 = 32

2.

c	3c − 2
8	3(8) − 2 = 22
11	3(11) − 2 = 31
20	3(20) − 2 = 58

III Translate the verbal model into a math expression, equation, or inequality.

3. t divided by 2 — $t \div 2$ or $\frac{t}{2}$

4. Your carry-on luggage must be at most 50 pounds. — $p \leq 50$

5. Jen sold more than 10 shirts. — $s > 10$

6. The sum of g and 3 is 36. — $g + 3 = 36$

IV Combine like terms

7. $w + w + w + w$ — $4w$

8. $3a - 2a + 8 + 5a - 5$ — $6a + 3$

9. $10x + 20 - 3x + 7$ — $7x + 27$

10. $3e + 2f + 8 - 6$ — $3e + 2f + 2$

(V) Create an equivalent expression with the Distributive Property.

11. $3(2r + 4) =$ $6r + 12$

12. $2(4x - 5) + 10x =$ $8x - 10 + 10x = 18x - 10$

13. $5(6 + c) + 3c - 3 =$ $30 + 5c + 3c - 3 = 8c + 27$

(VI) Create an equal expression by factoring with a greatest common factor.

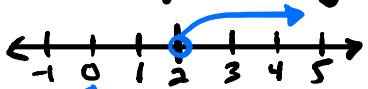
14. $10m + 40n =$ $10(m + 4n)$

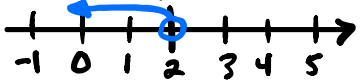
GCF = 10

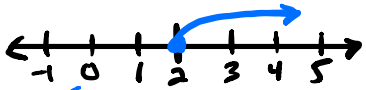
15. $15a + 45$ $15(a + 3)$

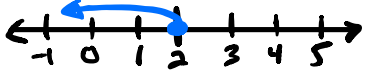
GCF = 15

Which inequality best represents $x \geq 2$

16. (A) 

(B) 

(C) 

(D) 

VII. Solve each given equation algebraically. Check your solutions.

17. $x + 6 = 17$

$-6 \quad -6$

$x = 11$

ch $11 + 6 = 17$ ✓

18. $y + 2.3 = 30.0$

$-2.3 \quad -2.3$

$y = 27.7$

ch $27.7 + 2.3 = 30$ ✓

19. $35 = r - 4$

$+4 \quad +4$

$39 = r$

ch $35 = 39 - 4$ ✓

20. $a - 17.3 = 12.23$

$+17.3 \quad +17.30$

$a = 29.53$

ch $29.53 - 17.3 = 12.23$ ✓

21. $\frac{8p}{8} = \frac{24}{8}$

$p = 3$

ch $8(3) = 24$

$24 = 24$ ✓

22. $\frac{r}{10} = 2$

$\frac{10}{1}\left(\frac{r}{10}\right) = 2(10)$

$\frac{10r}{10} = 20$

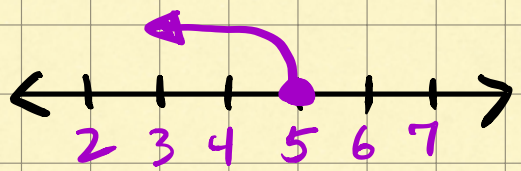
$r = 20$

ch $\frac{20}{10} = 2$

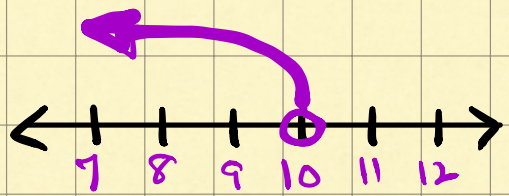
$2 = 2$ ✓

VIII. Graph each inequality.

23. $n \leq 5$



24. $10 > m$



IX. Complete each table. Write an equation to represent the rule. Name the independent and dependent variable.

25.

x	y
2	9
4	11
6	13
8	15

ind: x

dep: y

Rule: $y = x + 7$

26.

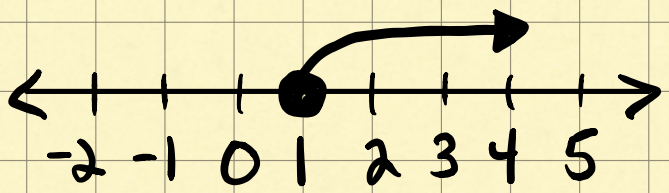
a	b
5	35
6	42
7	49
8	56

ind: a

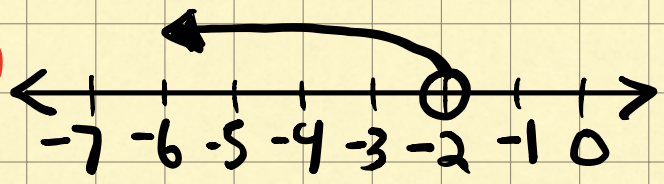
dep: b

Rule: $b = a \cdot 7$

X. Write an inequality to express the number line.

27. 

$x \geq 1$

28. 

$x < -2$

XI. Determine whether the given value is a solution?

29. $3x + 2 = 17$, $x = 5$

$3(5) + 2 = 17$

$17 = 17$ ✓

Yes or No

30. $w + 1 < 8$, $w = 8$

$8 + 1 < 8$ ✗

Yes or No