

Math 101, Practice Test for Chapter 2

Show all work for full credit. Please use pencil and write legibly.
(4 points each numbered problem)

<p>1. Simplify</p> $-5xy - (-8xy)$	<p>2. Simplify</p> $\frac{1}{6}x - \frac{1}{15}x$
<p>3. Simplify</p> $-15 - 4(6x - 5)$	<p>4. Simplify</p> $(9m - 1) - (5m - 3)$

5. Solve and check.

$$(a) x - 4 = 15$$

Check:

$$(b) x + 5 = -11$$

Check:

6. Solve and check.

$$(a) 10y = 80$$

Check:

$$(b) -20 = 5h$$

Check:

7. Solve and check.

$$5x - 11 = -21$$

Check:

8. Solve and check.

$$9 - 10w = 3 - 12w$$

Check:

9. Solve.

$$5(x - 4) - 5 = 4(5 - x)$$

10. Solve.

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

11. Solve.

$$-0.35x + 5.5 = 0.15x - 4.5$$

12. Solve.

$$\frac{5}{7}x = -\frac{3}{10}$$

13. Solve for a .

$$X = 7a + b$$

14. Solve for y .

$$12x - 4y = 16$$

15. Seven times the sum of a number and two is twenty more than the number. What is the number?

16. An investor earned \$400 on an initial principal investment of \$10,000 after one year. What was the interest rate as a percent?

17. A coin purse contains only nickels and dimes and there are five times as many dimes as nickels. The coins have a value of \$6.60. How many of each coin is in the purse?

	Dimes	Nickels
Number of coins		
Value of each coin		
Total value of coin		

18. An electrician cuts a 90 foot wire into three pieces. The second piece is fifteen feet longer than the first and the third is three times the first. How long is each piece?

First piece	
Second piece	
Third piece	

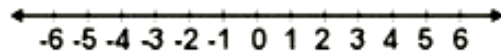
19. The length of a rectangle is 18 cm more than the width. If the perimeter of the rectangle is 204 cm, then what are the length and the width?

length	
width	

Perimeter = $2 \cdot \text{length} + 2 \cdot \text{width}$

20. Solve, graph, and write the solution set in interval notation.

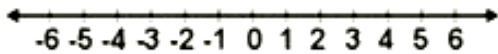
$$x - 5 < -2$$



Interval notation:

21. Solve, graph, and write the solution set in interval notation.

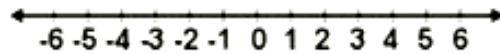
$$3x + 5 < 17$$



Interval notation:

22. Solve, graph, and write the solution set in interval notation.

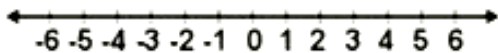
$$5 - 2x \leq 15$$



Interval notation:

23. Solve, graph, and write the solution set in interval notation.

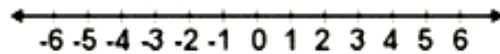
$$-\frac{1}{2}x < 1$$



Interval notation:

24. Solve, graph, and write the solution set in interval notation.

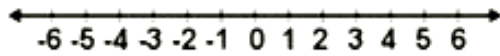
$$-2 < x - 5 < 0$$



Interval notation:

25. Solve, graph, and write the solution set in interval notation.

$$-13 < 4x - 1 < 7$$



Interval notation:

Addition Table

+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

Multiplication Table

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Rules for Signed Numbers

Addition				Subtraction			
Positive	+	Positive	= Positive	$A - B = A + (-B)$			
POSITIVE	+	Negative	= Positive				
Positive	+	NEGATIVE	= Negative				
Negative	+	Negative	= Negative				
Numbers in bold, capital letters have a greater magnitude than nonbold, lower case partner number.							
Multiplication				Division			
Positive	×	Positive	= Positive	Positive	÷	Positive	= Positive
Positive	×	Negative	= Negative	Positive	÷	Negative	= Negative
Negative	×	Positive	= Negative	Negative	÷	Positive	= Negative
Negative	×	Negative	= Positive	Negative	÷	Negative	= Positive

Rules for Fractions For any real numbers, a, b, c , and $d, b \neq 0, c \neq 0$, and $d \neq 0$

$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c} \qquad \frac{a}{c} - \frac{b}{c} = \frac{a-b}{c} \qquad \frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd} \qquad \frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$

Distributive Property

For any real numbers, a, b, c , and d

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

Properties of Equality	Properties of Inequality			
For any real numbers, a, b, c , If $a = b$, then $a + c = b + c$ and $ac = bc$	For any real numbers, a, b , and $c > 0$		For any real numbers, a, b , and $c < 0$	
	If $a < b$, then $a + c < b + c$ and $ac < bc$	If $a > b$, then $a + c > b + c$ and $ac > bc$	If $a > b$, then $a + c > b + c$ and $ac < bc$	If $a < b$, then $a + c < b + c$ and $ac > bc$