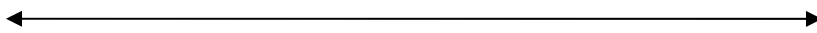


**DIRECTIONS:** All work should be numbered and *done on loose leaf*. Write neatly and clearly.  
Choose the correct answer and place the letter on the answer sheet.  
This assignment will be graded.

1. Evaluate  $3x+5$  if  $x = 4$ .  
a. 12                      b. 27                      c. 17                      d. 32
2. Evaluate  $(2x)^3$  if  $x = 5$ .  
a. 30                      b. 40                      c. 250                      d. 1000
3. Name the property illustrated by the following:  $(5 + 6) + 3 = 5 + (6 + 3)$   
a. Commutative Property of Addition                      b. Distributive Property  
c. Associative Property of Addition                      d. Identity Property of Addition
4. Simplify:  $[3(7 - 2)] \div (9 - 6)$ .  
a. 2                      b. 5                      c. 6                      d. 7
5. Simplify.  $3x^2 + 7x^2$   
a. 10                      b.  $10x^2$                       c.  $10x$                       d.  $10x^4$
6. Write an algebraic expression for the next odd number after an odd number  $x$ .  
a. 1                      b.  $x$                       c.  $x + 1$                       d.  $x + 2$
7. What is the absolute value of  $-3$ ?  
a.  $-3$                       b. 0                      c. 3                      d. none of these
8. Simplify  $-23 + (-17)$   
a.  $-40$                       b.  $-6$                       c. 6                      d. 40
9. Simplify.  $35 - (-18)$   
a.  $-53$                       b.  $-17$                       c. 17                      d. 53
10. Simplify:  $-5(6)(-18)$   
a. 60                      b.  $-48$                       c.  $-18$                       d. 540
11. Simplify:  $0.23 \div (-9.2)$   
a.  $-40$                       b.  $-0.025$                       c. 0.025                      d. 40
12. Simplify:  $4m^5(3m)$   
a.  $7m^5$                       b.  $12m^5$                       c.  $12m^6$                       d.  $7m^6$
13. Name the coefficient in  $2x^3y^4$   
a. 3                      b. 2                      c. 7                      d. 4
14. Evaluate:  $x^2(xy)^3$  if  $x = 4$  and  $y = -3$ .  
a. 288                      b. 27,648                      c.  $-288$                       d.  $-27,648$
15. Simplify:  $-(9)^2 - 4 + 2.3(0.8)$   
a.  $-83.16$                       b. 80.1                      c.  $-81.9$                       d. None of these

16. Give the degree of  $3x^2y^4$   
 a. 3                      b. 2                      c. 4                      d. 6
17. Which set describes the set of whole numbers?  
 a.  $\{1, 2, 3, 4, \dots\}$     b.  $\{0, 1, 2, \dots\}$     c.  $\{\dots - 2, - 1, 0, 1, 2, \dots\}$
18. If  $x < 0$ , then  $|x| = \underline{\hspace{2cm}}$ .  
 a.  $-x$                   b.  $x$                       c. 0                      d. None of these
19. Simplify:  $-249 + 53$ .  
 a. 216                  b.  $-196$                   c. 302                  d.  $-302$
20. Simplify:  $-123 - 78$ .  
 a.  $-45$                   b. 201                      c. 45                      d.  $-201$
21. Simplify:  $-18(12)(-15)$   
 a.  $-231$                   b.  $-3240$                   c. 3240                  d. 54
22. Simplify:  $\frac{-7}{8} \div \frac{13}{16}$ .  
 a.  $\frac{-14}{13}$                   b.  $\frac{-91}{128}$                   c.  $\frac{-13}{14}$                   d. None of these
23. Solve.  $0.5 = y + 3.91$   
 a.  $-3.41$                   b. 3.96                      c. 4.41                  d. None of these
24. Solve:  $-8.05 = x + 15.9$   
 a. 7.85                  b. 23.95                  c.  $-7.85$                   d.  $-23.95$
25. Solve:  $\frac{3}{5}x = -15$ .  
 a. 25                      b. 9                          c.  $-9$                       d.  $-25$
26. Solve:  $|r - 5| > 2$ .    Graph the solution set on the number line.



27. Simplify:  $(2x^2 - 5xy + 3) + (x^2 + 4xy + 5)$ .  
 a.  $3x^2 + 9xy + 8$                   b.  $3x^2 - xy + 8$                   c.  $3x^2 + xy + 8$
28. Simplify:  $(10x - 4xy - 2y) - (-3x + 5xy + 8y)$ .  
 a.  $13x - 9xy - 10y$                   b.  $7x - xy - 6y$                   c.  $7x - 9xy - 10y$
29. Simplify:  $(3x^2)^3$ .  
 a.  $9x^5$                   b.  $9x^6$                       c.  $27x^5$                   d.  $27x^6$

30. Simplify:  $(-8m^2)(2m)^2$ .

a.  $16m^4$

b.  $-16m^4$

c.  $-32m^4$

d.  $-32m^2$

31. Simplify:  $-3x(5x^2 + 6xy + 9y^2)$

a.  $-15x^3 - 18x^2y - 27xy^2$

b.  $-15x^2 - 18xy - 27y^2$

c.  $2x^2 - 3x^2y - 6xy^2$

32. Simplify:  $(2a - 6)(a + 5)$

a.  $2a^2 + 16a - 30$

b.  $2a^2 + 4a - 30$

c.  $2a^2 - a - 1$

d.  $2a^2 - 4a - 30$

33. Simplify:  $(x - 4)^2$

a.  $x^2 - 8x - 8$

b.  $x^2 - 16$

c.  $x^2 + 16$

d.  $x^2 - 8x + 16$

34. Solve:  $2(3x + 5) - 3x = 2(x + 4) - 3(2x + 6)$

a. 4

b.  $\frac{-20}{7}$

c. 0

d.  $\frac{-16}{7}$

35. Simplify:  $\frac{x^6y^8}{x^2y^4}$

a.  $x^3y^2$

b.  $x^8y^{12}$

c.  $x^{12}y^{32}$

d.  $x^4y^4$

36. Simplify:  $\frac{-40x^3}{5x^7}$

a.  $8x^4$

b.  $\frac{-8}{x^4}$

c.  $-8x^4$

d.  $\frac{8}{x^4}$

37. Give the prime factorization of 200.

a.  $2^2 \cdot 5^3$

b.  $2^3 \cdot 5^2$

c.  $2 \cdot 10^2$

d. None of these

38. Find the greatest common factor of 168 and 528.

a. 3696

b. 24

c. 154

d. 6

39. Find the least common multiple of 32 and 24.

a. 768

b. 8

c. 2

d. 96

40. Solve the following system:

$$2x + 3y = 1$$

$$2x + 4y = 3$$

(Write  $x = \underline{\hspace{1cm}}$ ,  $y = \underline{\hspace{1cm}}$  on answer sheet.)

41. Solve the following system:

$$3x - 2y = 7$$

$$4x - 3y = 1$$

(Write  $x = \underline{\hspace{1cm}}$ ,  $y = \underline{\hspace{1cm}}$  on answer sheet.)

42. The sum of two numbers is 16. The larger number is one more than twice the smaller number. What is the smaller number?

- a. 11                      b. -11                      c. 5                      d. -5

43. Simplify:  $(-6a)^{-3}$

- a.  $-\frac{1}{18a^3}$                       b.  $\frac{1}{18a^3}$                       c.  $-\frac{1}{216a^3}$                       d.  $\frac{1}{216a^3}$

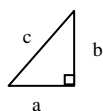
44. Simplify:  $\sqrt{24}$

- a.  $4\sqrt{6}$                       b.  $2\sqrt{6}$                       c.  $6\sqrt{2}$                       d. 12

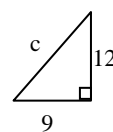
45. Simplify:  $5\sqrt{6} + 3\sqrt{6} - 4\sqrt{2}$

- a.  $3\sqrt{10}$                       b.  $6\sqrt{4}$                       c.  $8\sqrt{6} - 4\sqrt{2}$                       d. Cannot be simplified

46. The Pythagorean Theorem states  $a^2 + b^2 = c^2$  for any right triangle, where a & b are the sides and c is the hypotenuse. (See example picture)



Find the length of the unknown side in the following diagram:  
(Write c = \_\_\_\_ on answer sheet.)



47. The formula for the volume of a sphere is  $V = \frac{4}{3}\pi r^3$ , where r is the radius of the sphere.

Find the Volume of a sphere with a radius of 3 inches. Write your answer in term of  $\pi$ .

- a.  $36\pi \text{ in}^3$                       b.  $12\pi \text{ in}^3$                       c.  $8\pi \text{ in}^3$                       d.  $4\pi \text{ in}^3$

48. The sum of the measures of the interior angles of a triangle =  $180^\circ$ .

If the angles are in the ratio of 1:2:3, what is the degree measure of the largest angle?

- a.  $30^\circ$                       b.  $60^\circ$                       c.  $90^\circ$                       d. Cannot be determined

49. Find the Area of a square that has a perimeter of 20 cm. (Write A = \_\_\_\_ on answer sheet.)

50. Simplify the following ratio: 16 days to 4 weeks.

- a. 4 to 1                      b. 16 to 28                      c. 8 to 14                      d. 4 to 7

**ANSWER SHEET: Staple to loose leaf.**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

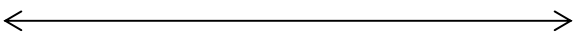
21. \_\_\_\_\_

22. \_\_\_\_\_

23. \_\_\_\_\_

24. \_\_\_\_\_

25. \_\_\_\_\_

26. 

27. \_\_\_\_\_

28. \_\_\_\_\_

29. \_\_\_\_\_

30. \_\_\_\_\_

31. \_\_\_\_\_

32. \_\_\_\_\_

33. \_\_\_\_\_

34. \_\_\_\_\_

35. \_\_\_\_\_

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41. \_\_\_\_\_

42. \_\_\_\_\_

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44. \_\_\_\_\_

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46. \_\_\_\_\_

47. \_\_\_\_\_

48. \_\_\_\_\_

49. \_\_\_\_\_

50. \_\_\_\_\_