

## WORKSHEET # 7 [4.1, 4.2, &amp; 4.3]

1. Evaluate the expression:  $(-4)^4$

[1] \_\_\_\_\_

2. Evaluate the expression:  $-6^2$

[A] 12 [B] 36 [C] -36 [D] -12

[2] \_\_\_\_\_

3. Evaluate the expression:  $\left(\frac{4}{5}\right)^4$

[3] \_\_\_\_\_

4. Evaluate the expression:  $\left(\frac{5}{9}\right)^3$

[A]  $\frac{5}{729}$  [B]  $\frac{125}{9}$  [C]  $\frac{5}{3}$  [D]  $\frac{125}{729}$ 

[4] \_\_\_\_\_

8.  $(-7x^3)^3$

[8] \_\_\_\_\_

9.  $(-9x^7)^5$

[A]  $-9^5x^{35}$ [B]  $9^5x^{12}$ [C]  $9^5x^{35}$ [D]  $-9^5x^{12}$ 

[9] \_\_\_\_\_

10.  $(3x^4)^3$

[A]  $27x^{12}$ [B]  $9x^7$ [C]  $9x^{12}$ [D]  $27x^7$ 

[10] \_\_\_\_\_

11.  $(v^3w^4)^3$

[A]  $v^9w^4$ [B]  $v^9w^{12}$ [C]  $v^6w^{12}$ [D]  $v^6w^7$ 

[11] \_\_\_\_\_

Multiply:

5.  $(5x^2y^4)(-2x^2y)$

[5] \_\_\_\_\_

6.  $(4xy^3)(6x^3y^3)$

[A]  $24x^3y^9$ [B]  $-24x^4y^6$ [C]  $24x^4y^6$ [D]  $-24xy^3$ 

[6] \_\_\_\_\_

12.  $(fg^4)^4$

[12] \_\_\_\_\_

13.  $(2xy^2)^4(xy)^3$

[A]  $16x^7y^{11}$ [B]  $2x^5y^{11}$ [C]  $2x^7y^{11}$ [D]  $16x^7y^5$ 

[13] \_\_\_\_\_

Simplify:

7.  $3x^2 \cdot 2x^3$

[7] \_\_\_\_\_

14.  $\frac{14x^3y^6}{-7x^2y^7}$

[A]  $-\frac{2x^5}{y^{13}}$ [B]  $-\frac{x}{2y}$ [C]  $\frac{2x}{y}$ [D]  $-\frac{2x}{y}$ 

[14] \_\_\_\_\_

15. Evaluate:  $\left(\frac{1}{6}x\right)^0$

[15] \_\_\_\_\_

16. Multiply:  $2^2 \times 6 \times 7^0$

- [A] 168    [B] 0    [C] 24    [D] 192

[16] \_\_\_\_\_

17. Write as a fraction and simplify  $7^{-2}$ .

- [A]  $-\frac{1}{49}$     [B]  $-\frac{1}{14}$     [C]  $\frac{1}{14}$     [D]  $\frac{1}{49}$

[17] \_\_\_\_\_

18. Write as a fraction and simplify  $3^{-3}$ .

[18] \_\_\_\_\_

19. Write as a fraction and simplify  $3^{-5}$ .

[19] \_\_\_\_\_

20. Express using a positive exponent:  $f^{-4}$

[20] \_\_\_\_\_

Evaluate:

21.  $\left(\frac{1}{4}\right)^{-3}$

[21] \_\_\_\_\_

22.  $\left(\frac{9}{10}\right)^{-2}$

- [A]  $\frac{100}{81}$     [B]  $\frac{81}{100}$     [C]  $-\frac{100}{81}$     [D]  $-\frac{81}{10}$

[22] \_\_\_\_\_

23. Simplify:  $\frac{2x^2y^{-2}}{6x^4y^4}$  Express your answer without negative exponents.

[23] \_\_\_\_\_

Simplify:

24.  $\frac{48x^9}{12x^{-5}}$

- [A]  $\frac{4}{x^{14}}$     [B]  $\frac{4}{x^4}$     [C]  $4x^{14}$     [D]  $4x^4$

[24] \_\_\_\_\_

25.  $(4x^3y^{-5})^{-3}$

[25] \_\_\_\_\_

26.  $(2x^4y^{-5})^3$

[26] \_\_\_\_\_

27.  $(2x^4y^{-2})^{-4}$

- [A]  $\frac{y^8}{8x^4}$     [B]  $\frac{y^8}{16x^{16}}$

- [C]  $\frac{-8x^4}{y^8}$     [D]  $\frac{16x^{16}}{y^8}$

[27] \_\_\_\_\_

28.  $\left(\frac{3x^2y^3}{9x^7y^{-3}}\right)^5$

[28] \_\_\_\_\_

Multiply:

29.  $x^8 \cdot x^{-6}$

- [A]  $\frac{1}{x^2}$     [B]  $x^2$     [C]  $\frac{1}{x^{48}}$     [D]  $x^{48}$

[29] \_\_\_\_\_

Multiply:

30.  $x^6 \cdot x^{-3}$

- [A]  $\frac{1}{x^{18}}$     [B]  $\frac{1}{x^3}$     [C]  $x^3$     [D]  $x^{18}$

[30] \_\_\_\_\_

31.  $a^{-4}(a^2)(a^{-6})$

[31] \_\_\_\_\_

32. Simplify:  $\frac{x^{-3}y^{-6}}{z^{-9}}$

[32] \_\_\_\_\_

33. Express in scientific notation: 0.00000019

- [A]  $19 \times 10^{-6}$                       [B]  $1.9 \times 10^{-7}$   
[C]  $1.9 \times 10^{-5}$                       [D]  $1.9 \times 10^{-6}$

[33] \_\_\_\_\_

34. Express in scientific notation: 41,000,000

[34] \_\_\_\_\_

35. Express in scientific notation: 3700

[35] \_\_\_\_\_

36. Express in scientific notation: 870,000,000

- [A]  $87 \times 10^7$                       [B]  $8.7 \times 10^8$   
[C]  $8.7 \times 10^{10}$                       [D]  $8.7 \times 10^9$

[36] \_\_\_\_\_

37. Express in standard form without exponents:

$7.32 \times 10^7$

- [A] 0.000000732                      [B] 73,200,000  
[C] 7,320,000                          [D] 732,000,000

[37] \_\_\_\_\_

38. Express in standard form without exponents:

$1.82 \times 10^3$

[38] \_\_\_\_\_

39. Write in decimal notation:  $4.89 \times 10^{-3}$

- [A] 0.00489                          [B] 0.000489  
[C] 4890                                [D] 0.0489

[39] \_\_\_\_\_

40. Express in standard form without exponents:

$2.15 \times 10^3$

[40] \_\_\_\_\_