Key

EXPONENT WORKSHEET

FIND THE VALUE OF EACH EXPRESSION:

1) $5^5 =$ 3125

2) $2^{11} =$ 2048

3) $6^3 =$ 216

4) $9^3 =$ 729

5) $100^2 =$ 10000

6) $6^5 =$ 7776

7) $10^7 =$ 10000000

8) $3^5 =$ 243

9) $4^8=$ 65536

10) $12^4 =$ 20736

11) $16^2 =$ 256

12) $27^1 =$ 27

SIMPLIFY EACH PRODUCT:

13) $10^{12} \bullet 10^{35} =$ 10^{47}

14) $a^7 \bullet a^{12} =$ a^{19}

15) $c^3 \bullet c^8 =$ c^{11}

16) $d^7 \bullet d^9 =$ d^{16}

17) $x^{2e} \bullet x^{8e} =$ x^{10e}

18) $w^{103} \bullet w^{1030} =$ w^{1133}

19) $a^6 \bullet b^5 =$ a^6b^5

20) $10^a \bullet 10^b =$ 10^{ab}

21) $g^{12} \bullet g^{19} \bullet g^{11} =$ g^{42}

SIMPLIFY EACH PRODUCT:

22) $(2x^2)(4x^3y^2) =$ $8x^5y^2$

23) $(-3a^2b)(6ab^4c) =$ $-18a^3b^5c$

24) $(7q^5)(12q^3r^5) =$ $84q^8r^5$

SIMPLIFY EACH EXPRESSION:

25) $(x^2)^3 =$ x^6

26) $(a^7)^5 =$ a^{35}

27) $(y^{13})^4 =$ y^{52}

28) $(w^{-21})^{-15} =$ w^{315}

29) $(5^2)^3 =$ 5^6

30) $(23^7)^8 =$ 23^{56}

31) $(-y^5)^4 =$ $-y^{20}$

32) $(4y^3)^2 =$ 4^2y^6

EVALUATE EACH X = 5, Y = -1, AND Z = 4

33) $y^4 =$ $(-1)^4 = 1$

34) $3x^3 =$ $3(5^3)$ $3(125)$ 375

35) $2y^2 =$ $2(-1)^2$ $2(1)$ 2

36) $z^2 =$ 4^2 16

37) $(yz)^2 =$ $(-1 \cdot 4)^2$ $(-4)^2$ 16

38) $(yx)^3 =$ $(-1 \cdot 5)^3$ $(-5)^3$ -125

39) $x^2z^2 =$ $5^2 4^2$ $25 \cdot 16$ 400

40) $y^x =$ $(-1)^5$ -1

41) What is the area of a square with the length of a side equaling $3a^5$?

$A = s^2$

$A = L \times W$

$3a^5$ $3a^5$

$(3a^5)^2$ $3^2 a^{10}$ $9a^{10}$

$3a^5 \cdot 3a^5$ $9a^{10}$

42) What is the area of the rectangle with the width of $6x^2$ *and the length of* $12x^3$?

$A = L \times W$

$6x^2$ $12x^3$

$6x^2 \cdot 12x^3$ $72x^5$

$12 \times 6 = 72$