Kuta Software - Infinite Pre-Algebra

Name KEY

Exponents and Multiplication

Date _____ Period ____

Simplify. Your answer should contain only positive exponents.

1) $4^2 \cdot 4^2$ 4^4

2) $4^1 \cdot 4^2$ 4^3

3) $3^2 \cdot 3^2$ 3^4

4) $2^1 \cdot 2^2 \cdot 2^2$ 2^5

5) $2n^4 \cdot 5n^4$ $10n^8$

6) $6r^1 \cdot 5r^2$ $30r^3$

7) $2n^4 \cdot 6n^4$ $12n^8$

8) $6k^2 \cdot k^1$ $6k^3$

9) $5b^2 \cdot 8b^1$ $40b^3$

10) $4x^2 \cdot 3x^1$ $12x^3$

11) $6x^1 \cdot 2x^2$ $12x^3$

12) $6x^1 \cdot 6x^3$ $36x^4$

13) $7v^3 \cdot 10u^3v^5 \cdot 8uv^3$

$560u^4v^{11}$

14) $9xy^2 \cdot 9x^5y^2$

$81x^6y^4$

15) $6m^3n^3 \cdot 8m^2n^3$

$48m^5n^6$

16) $6x^2 \cdot 6x^3y^4$

$36x^5y^4$

17) $7u^2v^5 \cdot 9uv^3$

$63u^3v^8$

18) $uv \cdot 4uv^5$

$4u^2v^6$

19) $10xy^3 \cdot 8x^5y^3$

$80x^6y^6$

20) $3u^4v^5 \cdot 7u^2v^3$

$21u^6v^8$

21) $(2x^2)^2$

$4x^4$

22) $(p^4)^4$

p^{16}

23) $(k^3)^4$

k^{12}

24) $(7k)^2$

$49k^2$

25) $(x^2)^3$

x^6

26) $(2b^2)^4$

$16b^8$

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Exponents and Division

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $\frac{5^4}{5^1} = 5^3$

2) $\frac{3^4}{3^3} = 3$

3) $\frac{2^7}{2^3} = 2^4$

4) $\frac{2^4}{2^2} = 2^2$

5) $\frac{3r^3}{2r} = \frac{3r^2}{2}$

6) $\frac{7k^{10}}{4k^3} \quad \frac{7k^7}{4}$

7) $\frac{10p^4}{6p} = \frac{5p^3}{3}$

8) $\frac{3b^5}{10b^3} = \frac{3b^2}{10}$

9) $\frac{8m^3}{10m^3} = \frac{4}{5}$

10) $\frac{7n^8}{2n^5} \quad \frac{7n^3}{2}$

11) $\frac{2n^2}{n} = 2n$

12) $\frac{8x^9}{10x^5} = \frac{4x^4}{5}$

13) $\frac{12x^3}{9y^8} = \frac{4x^3}{3y^8}$

14) $\frac{14x^6y^7}{6x^5y^4} = \frac{7xy^3}{3}$

15) $\frac{11u^{11}v^9}{17u^7v} = \frac{11u^4v^8}{17}$

16) $\frac{4y^4x^8}{14yx^8} = \frac{2y^3}{7}$

17) $\frac{12yx^{14}}{10yx^8} = \frac{6x^6}{5}$

18) $\frac{18x^8y^8}{10x^3} = \frac{9x^5y^8}{5}$

19) $\frac{5n^8}{20n^8} = \frac{1}{4}$

20) $\frac{16y^5x^4}{9x\ y^2} = \frac{16y^3x^3}{9}$

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Name KEY

Powers of Products and Quotients

Date _____ Period ____

Simplify. Your answer should contain only positive exponents.

1) $(3a^2)^3 = 27a^6$

2) $(2n^4)^4 = 16n^{16}$

3) $(3x^4)^4 = 81x^{16}$

4) $(6b^2)^2 = 36b^4$

5) $(7y^4)^2 = 49y^8$

6) $(3ab^4)^4 = 81a^4b^{16}$

7) $(2x^4y^4)^3 = 8x^{12}y^{12}$

8) $(5mn^3)^3 = 125m^3n^9$

9) $(x^2y^2)^2 = x^4y^4$

10) $(6yx^4)^2 = 36y^2x^8$

11) $(u^4v^3)^2 = u^8v^6$

12) $(2x^4y^4)^4 = 16x^{16}y^{16}$

13) $(3x^2 \cdot 2x^2)^2$

$(6x^4)^2 = 36x^8$

14) $(2p^3 \cdot 2p)^2$

$(4p^4)^2 = 16p^8$

15) $(4n^3 \cdot n^2)^2$

$(4n^5)^2 = 16n^{10}$

16) $(3x \cdot 2x)^2$

$(6x^2)^2 = 36x^4$

17) $(4x^4 \cdot x^4)^3$

$(4x^8)^3 = 64x^{24}$

18) $(4n^4 \cdot n)^2$

$(4n^5)^2 = 16n^{10}$