EXTRA PRACTICE — Exercises

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Unit V – Second Degree Relations and Higher - Polynomials Part A - Exponent Notation

Lesson 3 – Extenstions of Operations with Powers

Find the power of the product for each of the following, using exponent notation.

1.
$$(2a)^3$$

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

1.
$$(2a)^3$$
 2. $(3xy)^2$ 3. $(-2x^4y^2)^5$ 4. $(3x^2y^3)^2$

4.
$$(3x^2y^3)^2$$

5.
$$(6^{-4})^{-3}$$

6.
$$(5a^2b^2)^3$$

5.
$$(6^{-4})^{-3}$$
 6. $(5a^2b^2)^3$ 7. $(-6a^2b^3c)^2$ 8. $(12^{3-a})^{2b}$

8.
$$(12^{3-a})^{2b}$$

9.
$$(8^x)^{4y}$$

$$10.\left(4x^{3a}y^{2b}\right)^{5c}$$

Find the power of the product for each of the following, using exponent notation..

11.
$$\left(\frac{m}{n}\right)^{\frac{1}{2}}$$

12.
$$\left(\frac{h}{i}\right)^5$$

$$11. \left(\frac{m}{n}\right)^3 \qquad \qquad 12. \left(\frac{h}{i}\right)^5 \qquad \qquad 13. \left(\frac{-2}{3}\right)^2 \qquad \qquad 14. \left(\frac{y}{x}\right)^1$$

14.
$$\left(\frac{y}{x}\right)$$

15.
$$\left(\frac{a}{b}\right)^7$$

16.
$$\left(\frac{5}{8}\right)^2$$

15.
$$\left(\frac{a}{b}\right)^7$$
 16. $\left(\frac{5}{8}\right)^2$ 17. $\left(\frac{7}{-2}\right)^3$ 18. $\left(\frac{1}{3}\right)^2$

18.
$$\left(\frac{1}{3}\right)^2$$

$$19. \left(\frac{5}{2}\right)^3$$

$$19. \left(\frac{5}{2}\right)^3 \qquad \qquad 20. \left(\frac{-2}{-3}\right)^2$$

Simplify each of the following expressions using operations with exponents.

$$21.\left(\frac{x^3}{y^4}\right)^{\frac{1}{2}}$$

21.
$$\left(\frac{x^3}{y^4}\right)^2$$
 22. $\left(\frac{2x^3}{y^4}\right)^2$ 23. $\left(\frac{4^3}{3^4}\right)^2$ 24. $\left(\frac{x^4}{y^5}\right)^3$

23.
$$\left(\frac{4^3}{3^4}\right)^2$$

$$24. \left(\frac{x^4}{y^5}\right)^3$$

$$25. \left(\frac{x^2}{y}\right)^2 \cdot \left(\frac{x^3}{y^5}\right)^2 \qquad 26. \left(\frac{a}{b}\right)^5 \cdot \left(\frac{a}{b}\right)^4 \qquad 27. \left(\frac{2m}{3n}\right)^4 \qquad 28. \left(\frac{ab}{c}\right)^3 (2)^4$$

26.
$$\left(\frac{a}{b}\right)^5 \cdot \left(\frac{a}{b}\right)^5$$

27.
$$\left(\frac{2m}{3n}\right)^4$$

28.
$$\left(\frac{ab}{c}\right)^3 (2)^4$$

$$29. \left(\frac{r}{s}\right)^3 \cdot \left(\frac{r^2}{s^3}\right)^2$$

29.
$$\left(\frac{r}{s}\right)^3 \cdot \left(\frac{r^2}{s^3}\right)^4$$
 30. $\left(\frac{m^2n}{p}\right)^4 \cdot \left(\frac{m^3n^2}{p^2}\right)^3$

EXTRA PRACTICE — Answer Key

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Unit V - Second Degree Relations and Higher - Polynomials Part A – Exponent Notation

Lesson 3 – Extenstions of Operations with Powers

Find the power of the product for each of the following, using exponent notation.

1.
$$8a^3$$

2.
$$9x^2y^2$$

2.
$$9x^2y^2$$
 3. $-32x^{20}y^{10}$ 4. $9x^4y^6$

4.
$$9x^4y^6$$

6.
$$125a^6b^6$$

6.
$$125a^6b^6$$
 7. $36a^4b^6c^2$ 8. 12^{6b-2ab}

8.
$$12^{6b-2ab}$$

$$10.4^{5c} x^{15ac} y^{10bc}$$

Find the power of the product for each of the following, using exponent notation..

11.
$$\frac{m^3}{n^3}$$

11.
$$\frac{m^3}{n^3}$$
 12. $\frac{h^5}{i^5}$ 13. $\frac{4}{9}$ 14. $\frac{y}{x}$

13.
$$\frac{4}{9}$$

14.
$$\frac{y}{y}$$

15.
$$\frac{a^7}{b^7}$$

16.
$$\frac{25}{64}$$

15.
$$\frac{a^7}{h^7}$$
 16. $\frac{25}{64}$ 17. $\frac{-343}{8}$ 18. $\frac{1}{9}$

18.
$$\frac{1}{6}$$

19.
$$\frac{125}{8}$$

20.
$$\frac{4}{9}$$

Simplify each of the following expressions using operations with exponents.

21.
$$\frac{x^6}{y^8}$$

22.
$$\frac{4x^6}{y^8}$$

23.
$$\frac{4096}{6561}$$

24.
$$\frac{x^{12}}{v^{15}}$$

25.
$$\frac{x^{10}}{v^{12}}$$

26.
$$\frac{a^9}{h^9}$$

27.
$$\frac{16m^4}{81n^4}$$

27.
$$\frac{16m^4}{81n^4}$$
 28. $\frac{16a^3b^3}{c^3}$

29.
$$\frac{r^{11}}{s^{15}}$$

$$30. \ \frac{m^{17}n^{10}}{p^{10}}$$