EXTRA PRACTICE — Exercises

Unit V – Second Degree Relations and Higher - Polynomials
Part A – Exponent Notation
Lesson 4 – Special Cases of Powers

Simplify each of the following exponential forms using the patterns illustrated in the example. Make sure your answers do not contain exponents that are zero or negative.

1. a^2b^{-3}

2. m^{-4}

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

4. $\dfrac{p^2q^{-3}}{p^{-1}q^2}$

5. $x^{-5}\cdot x^3$

6. $\dfrac{a^{-4}}{b^3}$

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

8. $\left(^{-}3x^{-2}\right)\left(xy^3\right)$

9. $(mn)^{-2}(mn)^{-3}$

10. $\dfrac{y^{-3}}{x^{-2}}$

11. 3^0

12. $\dfrac{x}{a^{-4}}$

13. $\dfrac{2r^2s}{4r^3s^{-3}}$

14. $\left(\dfrac{5a^{-3}b}{^{-}10a^{-2}b^2}\right)^2$

15. $\left(30a^5b-a^2\right)2a^{-2}$

16. $\left(\dfrac{16a^{-3}b^2}{\frac{1}{4}ab}\right)^0$

17. $\left(^{-}11\right)^{-1}$

18. $(3y)^{-2}$

19. $\left(^{-}7\right)^0$

20. $\dfrac{x^3y^{-2}}{z^{-4}}$

21. $\left(4x^4y^{-1}z\right)\left(^{-}3x^{-2}y^{-2}z^5\right)$

22. $\left(\dfrac{6x^{-2}}{18x^{-7}}\right)^2$

23. $9xy^0$

24. $\dfrac{x^5y^{-2}}{x^3y^{-2}z^{-3}}$

25. $\dfrac{1}{y^{-7}}$

26. $\left(5x^2y^{-3}\right)\left(7xy^5\right)$

27. $(9xy)^0$

28. $\left[\left(^{-}3a^{-6}b^2\right)^5\right]^{-2}$

29. $\left(\dfrac{x^{-2}y^5z^0}{x^{-3}y^{-3}z^2}\right)\cdot\left(\dfrac{x^3}{y^{-5}}\right)$

30. $\left(\dfrac{6y^3}{4x^2}\right)^{-2}$

EXTRA PRACTICE — Answer Key

Unit V – Second Degree Relations and Higher - Polynomials
Part A – Exponent Notation
Lesson 4 – Special Cases of Powers

Simplify each of the following exponential forms using the patterns illustrated in the example. Make sure your answers do not contain exponents that are zero.

1. $\frac{a^2}{b^3}$
2. $\frac{1}{m^4}$
3. $\frac{1}{-64}$
4. $\frac{p^3}{q^5}$
5. $\frac{1}{x^2}$
6. $\frac{1}{a^7}$
7. $\frac{5x^7}{y^2}$
8. $\frac{-3y^3}{x}$
9. $\frac{1}{m^5n^5}$
10. $\frac{x^2}{y^3}$
11. 1
12. a^4x
13. $\frac{s^4}{2r}$
14. $\frac{1}{4a^2b^2}$
15. $60a^3b-2$
16. 1
17. $\frac{1}{-11}$
18. $\frac{1}{9y^2}$
19. 1
20. $\frac{x^3z^4}{y^2}$
21. $\frac{-12x^2z^6}{y^3}$
22. $\frac{x^{10}}{9}$
23. $9x$
24. x^2z^3
25. y^7
26. $35x^3y^2$
27. 1
28. $\frac{a^{60}}{59049b^{20}}$
29. $\frac{x^4y^{13}}{z^2}$
30. $\frac{4x^4}{9y^6}$