

Chapter 8 Practice Test

Short Answer

Simplify the expression.

1. $(-7.8)^0$ $\textcircled{1}$

2. $-(2)^{-3}$ $-\frac{1}{2^3} = -\frac{1}{8}$

3. $(6)^{-2}$ $\frac{1}{6^2} = \frac{1}{36}$

4. $6a^{-3}m^4$ $\frac{6m^4}{a^3}$

5. $\frac{4}{x^{-3}y^7}$ $4x^3y^7$

6. $7^{-2} \cdot 8^0$ $\frac{1}{7^2} \cdot 1 = \frac{1}{49}$

7. $9^{-3} \cdot 9^8 \cdot 9^3$ 9^8

8. $(8.51)^{-8} \cdot (8.51)^9$ $(8.51)^1 = 8.51$

9. $(x^2)^6$ x^{12}

10. $(x^{-5})^3$ $x^{-15} = \frac{1}{x^{15}}$

11. $\frac{5^{10}}{5^8}$ $5^2 = 25$

12. $\frac{k^{14}}{k^{10}}$ k^4

13. $\frac{d^5}{d^8}$ $d^{-3} = \frac{1}{d^3}$

14. $\frac{3^2}{3^5}$ $3^{-3} = \frac{1}{3^3} = \frac{1}{27}$

15. $\left(\frac{9}{7}\right)^3$ $\frac{9^3}{7^3} = \frac{729}{343}$

Name: _____

ID: A

$$16. (-h^2)^5 = (-1 \cdot h^2)^5 = (-1)^5 h^{10} = -1h^{10}$$

$$17. 6 \cdot 2^{-4} = 6 \cdot \frac{1}{2^4} = \frac{6^3}{16^3} = \frac{3}{8}$$

$$18. 5x^{-6} \cdot 7x^5 = 35x^{-1} = \frac{35}{x}$$

$$19. 5g^5 \cdot 4h^6 \cdot g^6 = 20g^{11}h^6$$

$$20. -4x^3 \cdot 2y^{-2} \cdot 5y^5 \cdot x^{-8} = -40x^{-5}y^3 = \frac{-40y^3}{x^5}$$

$$21. (x^7)^0 (x^6)^2 = (x^0)(x^{12}) = x^{12}$$

$$22. (4h^4)^4 = 4^4 h^{16} = 256h^{16}$$

$$23. (4xy^5)^2 (xy)^6 = (16x^2y^{10})(x^6y^6) = 16x^8y^{16}$$

$$24. 5x^8 \cdot x^{-2} = 5x^6$$

$$25. (-6a^5b^3)^3 (a^5b^6)^4 = [(-6)^3 a^{15} b^9] [a^{20} b^{24}] = -216 a^{35} b^{33}$$

$$26. \frac{j^{-3}k^{-6}}{j^{-8}k^4} = j^5 k^{-10} = \frac{j^5}{k^{10}}$$

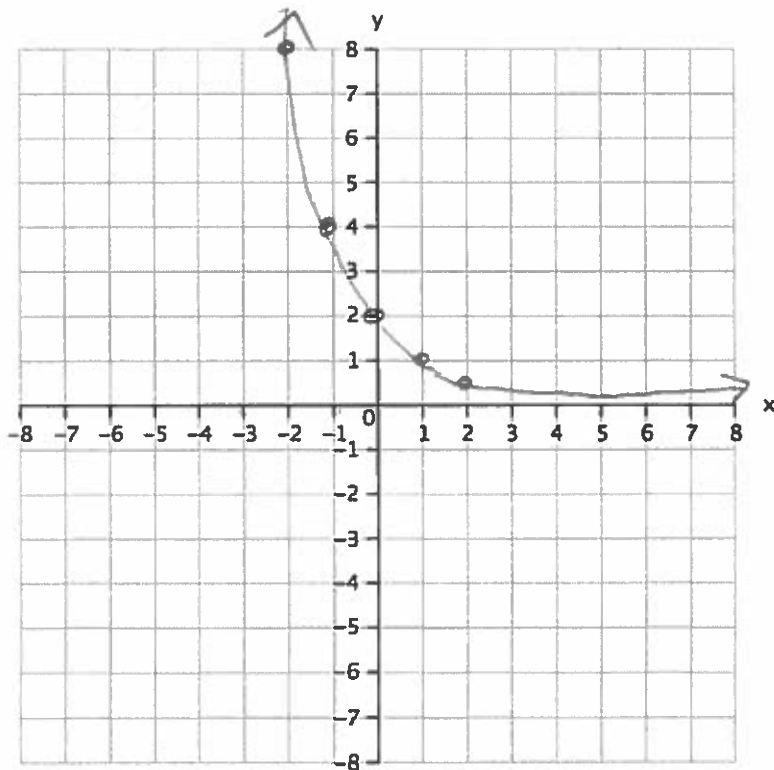
$$-3 - (-8) = -3 + 8$$

$$-6 - 4 = -10$$

$$27. \left(\frac{3m}{4}\right)^2 \frac{3^2 m^2}{4^2} = \frac{9m^2}{16}$$

Graph of the function. Use $x = \{-2, -1, 0, 1, 2\}$ for your table.

$$28. y = 2(0.50)^x$$



x	$2(0.50)^x$	y
-2	$2(0.50)^{-2}$	8
-1	$2(0.50)^{-1}$	4
0	$2(0.50)^0$	2
1	$2(0.50)^1$	1
2	$2(0.50)^2$	0.5

Evaluate the function rule for the given value.

$$29. y = 9 \cdot 2^x \text{ for } x = -5 \quad y = 9 \cdot 2^{-5} = 9 \cdot \frac{1}{2^5} = \frac{9}{32} = \frac{9}{32}$$

30. Suppose a population of 250 crickets doubles in size every 6 months. How many crickets will there be after 2 years?

$$y = a \cdot b^x$$

$$a = 250$$

$$b = 2$$

$$x = 2 \text{ times a year for } 2 \text{ years} = 4 \text{ time periods}$$

$$y = (250)(2^4) = (250)(16)$$

$$y = 4000 \text{ crickets}$$

Name: _____

ID: A

31. Suppose an investment of \$6,600 ^a doubles ^b in value every 8 years. How much is the investment worth after 40 years?

$$a = 6600$$

$$b = 2$$

$$x = \frac{40}{8} = 5 \text{ time periods}$$

$$y = (6600)(2^5)$$

$$y = (6600)(32)$$

$$y = \$211,200$$

Other

32. $(x^3y^6)(x^4y^8)$ x^7y^{14}

33. $(3x^4y^{-5}z^2)^2$ $3^2x^8y^{-10}z^4 = \frac{9x^8z^4}{y^{10}}$

34. $\frac{x^5y^4z^3}{xy^7z^3}$ $x^4y^{-3}z^0 = \frac{1x^4}{y^3}$ or $\frac{x^4}{y^3}$

35. $(xy)^0 = 1$