4A.3 **Learning Opportunity**

Integer Exponents

Name: _____

Directions

What Do You Call It When a Plane Comes Down in a Garbage Heap?

Evaluate each power. For each set of exercises, there is one extra answer. Write the letter of this answer in boxes containing the number of that set of exercises.

9	6	10	9	1	4	7	9	8	2	5	8	3

1

a. 5^2

b. 5^{-2}

c. 2^{-5}

answers

(B) $\frac{1}{32}$ (S) $\frac{1}{64}$

(K) 25 (V) $\frac{1}{25}$

2

a. 10^{-6}

b. 7^{-3}

c. 12^{-2}

answers

(F) $\frac{1}{343}$ (C) $\frac{1}{1{,}000{,}000}$

(D) $\frac{1}{288}$ (E) $\frac{1}{144}$

3

a. 16^{-1}

b. 3^{-4}

c. 8^0

answers

(M) $\frac{1}{16}$ (P) $\frac{1}{81}$

(Y) 1 (G) $\frac{1}{32}$

4

a. 6^{-3}

b. $(-6)^{-3}$

c. $(-11)^{-2}$

answers

(X) $\frac{1}{121}$ (H) $-\frac{1}{121}$

(U) $\frac{1}{216}$ (O) $-\frac{1}{216}$

5

a. $(-4)^{-1}$

b. $(-4)^{-2}$

c. $(-4)^{-3}$

answers

(I) $\frac{1}{32}$ (R) $-\frac{1}{4}$

(E) $-\frac{1}{64}$ (A) $\frac{1}{16}$

6

a. $(-15)^{-2}$

b. -15^{-2}

c. -15^{-3}

answers

(P) $\frac{1}{225}$ (J) $-\frac{1}{225}$

(T) $\frac{1}{3375}$ (N) $-\frac{1}{3375}$

7

a. $(-2)^{-4}$

b. -2^{-4}

c. -2^{-5}

answers

(W) $-\frac{1}{32}$ (L) $\frac{1}{32}$

(B) $\frac{1}{16}$ (V) $-\frac{1}{16}$

8

a. -9^3

b. -9^{-3}

c. 9^{-3}

answers

(N) 729 (E) −729

(R) $\frac{1}{729}$ (O) $-\frac{1}{729}$

9

a. $(-10)^{-5}$

b. 10^{-5}

c. 10^0

answers

(P) 1 (O) $\frac{1}{100{,}000}$

(A) 0 (U) $-\frac{1}{100{,}000}$

10

a. x^{-2}

b. x^{-7}

c. $-x^{-7}$

answers

(E) $\frac{1}{x^7}$ (F) $-\frac{1}{x^7}$

(M) $\frac{1}{x^2}$ (R) x^2

Write each of the following in exponential form. The base should be a whole number.

11) $5 \times 5 \times 5 \times 5 \times 5 \times 5$

12) $\frac{1}{7}, \frac{1}{7}, \frac{1}{7}$

13) $\frac{1}{8 \cdot 8 \cdot 8 \cdot 8 \cdot 8}$

Using the variable values: x = 2, y = 3, and z = 4, evaluate (solve) each of the following.

14) $z^4 - x^3$

15) $x^{-2} + y^{-2}$