



## Worksheet

### Grade 7 - Mathematics

### Chapter 14 - Powers

A. Choose the correct option.

1) If  $\left(\frac{1}{2}\right)^x = \frac{1}{32}$ ,  $x =$  \_\_\_\_\_.

- a) 3                      b) 4                      c) 5                      d) 6

2)  $5^2 \times 5^3 = 5^y$ ;  $y =$  \_\_\_\_\_.

- a) 6                      b) 5                      c) 1                      d) 9

3) If  $\left(\frac{1}{2}\right)^x \times 2^{10} = 2^n$ ,  $n =$  \_\_\_\_\_.

- a) 5                      b) 8                      c) 12                      d) 6

4) If  $(7^m)^3 = 7^{15}$ ,  $m =$  \_\_\_\_\_.

- a) 12                      b) 9                      c) 5                      d) 18

5) If  $\left(\frac{1}{2}\right)^2 \times \left(\frac{1}{3}\right)^2 = \frac{1}{3}$ ;  $p =$  \_\_\_\_\_.

- a) 2                      b) 4                      c) 3                      d) 1

B. State whether the following statements are true or false

1)  $5^0 = 1$ .

2)  $2^4 = 4^2$ .

3)  $5.12 \times 10^6 = 51,20,00,000$ .

4)  $0.125 = \left(\frac{1}{2}\right)^3$ .

5)  $8^2 \times 8^7 = 8^{14}$

C. Fill in the blanks.

1) Value of  $2^2 \times 2^3 =$  \_\_\_\_\_.

2) value of  $13^3 =$  \_\_\_\_\_

3) Value of  $6^5 \div 6^2 =$  \_\_\_\_\_ .

4) Value of  $0^5 + 0^2 + 0^3 =$  \_\_\_\_\_ .

5) Value of  $(2^0 + 5^0 + 10^0)^2 =$  \_\_\_\_\_ .

**D.** Answer the following questions.

1) Simplify and give answer in exponential form.

a)  $\frac{3^2 \times 3^2 \times 3^3 \times 3^5}{3 \times 3^4 \times 3}$

b)  $(10^2)^3$

c)  $4^2 \times 4^1 \times 4^3 \times 4^3$

d)  $5^2 \div 5^2$

e)  $15^4 \times 15^3 \div 15^2$

f)  $(5^2)^3 \div 5^2$

g)  $(7^4)^3 \div (7^2)^2$

h)  $(20^2)^3 \times (20^3)^2$

2) Write as given.

a) 625 as a power of 5

b) -1000 as a power of -10

c) 729 as a power of -3

d) -512 as a power of -2

e) 1296 as a power of -6

3) Write whether the following are perfect squares.

a) 289

b) 440

c) 361

4) Write whether the following are perfect cubes.

a) -125

b) 343

c) -730