

POWERS

CHECK YOUR UNDERSTANDING

1) Express each of the following products as a power.

a) 7×7 b) $9 \times 9 \times 9 \times 9$ c) $(2)(2)(2)(2)(2)(2)$ d) $1.5 \times 1.5 \times 1.5$ e) $\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$

2) Express each of the following powers as a product

a) 6^2 b) 12^4 c) 8^5 d) $\left(\frac{2}{3}\right)^4$

3) Evaluate each of the following powers.

a) 3^2 b) 2^3 c) 2^4 d) 5^2 e) 3^4 f) 2^5 g) 4^3 h) 3^5

4) Determine the exponent that makes each of the following statements true.

a) $2^? = 128$ b) $9^? = 729$ c) $8^? = 8$ d) $\left(\frac{1}{4}\right)^? = \frac{1}{64}$

5) Express 16 as a power in two different ways.

6) Express 64 as a power in three different ways.

ANSWERS

1) a) 7^2 b) 9^4 c) 2^6 d) 1.5^3 e) $\left(\frac{1}{2}\right)^3$

2) a) 6×6 b) $12 \times 12 \times 12 \times 12$ c) $8 \times 8 \times 8 \times 8 \times 8$ d) $\frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3}$

3) a) 9 b) 8 c) 16 d) 25 e) 81 f) 32 g) 64 h) 243

4) a) 7 b) 3 c) 1 d) 3

5) Answers may vary. For example, 2^4 , 4^2 , 16^1 .

6) Answers may vary. For example, 2^6 , 4^3 , 8^2 , 64^1 .