Check Your Understanding (Top)

1. Use mental math to calculate each root.

   a) $\sqrt{36}$ **b)** $\sqrt{144}$ **c)** $\sqrt[3]{27}$ **d)** $\sqrt[3]{-64}$

2. Use mental math to calculate each root.

   a) $\sqrt{3 \cdot 3 \cdot 3 \cdot 3}$ **b)** $\sqrt{2^{12}}$ **c)** $\sqrt[3]{5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5}$ **d)** $\sqrt[3]{9^6}$

3. **a)** A square has an area of 196 cm². Calculate its side length.

   b) A cube has a volume of 216 cm³. Calculate its edge length.

4. Use a calculator to calculate each square root.
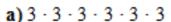   Write the answer to 2 decimal places where necessary.

   a) $\sqrt{289}$ **b)** $\sqrt{3.24}$ **c)** $\sqrt{1000}$ **d)** $\sqrt{\dfrac{3}{5}}$

Check Your Understanding

1. Write each expression as a power.   (Bottom)

    a) $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
    b) $(-7)(-7)(-7)(-7)(-7)(-7)(-7)(-7)$
    c) $10 \cdot 10 \cdot 10 \cdot 10$
    d) $(-5)(-5)(-5)$

2. Write each power as repeated multiplication.

    a) 7^6 b) $(-17)^5$
    c) 100^3 d) $(-99)^4$

3. Use mental math to calculate each power.

    a) 3^3 b) 2^4
    c) $(-5)^2$ d) $(-4)^3$

4. Use a calculator to calculate each power.

    a) 13^5 b) 72^4
    c) $(-24)^4$ d) $(-8)^9$

5. A shelf contains 8 boxes. Each box contains 8 cartons.
   Each carton contains 8 pens. Write the number of pens as a power.
   How many pens are on the shelf?