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CAMI Mathematics: Grade 7

Exponents, squares and cubes

1. Simplify the following expressions without using a calculator.

(a) $\sqrt{16}$
(b) $\sqrt{36}$
(c) $\sqrt{1}$
(d) $\sqrt{100}$
(e) $\sqrt{81}$

2. Simplify the following expressions without using a calculator.

(a) $\sqrt[3]{27}$
(b) $(\sqrt[3]{38})^3$
(c) $\sqrt[3]{216}$
(d) $\sqrt[3]{8}$
(e) $(\sqrt[3]{1})^3$

3. Simplify the following expressions without using a calculator.

(a) $\sqrt{16 \times 4}$
(b) $\sqrt{72 \div 8}$
(c) $\sqrt{6+10}$
(d) $\sqrt{121}+\sqrt{36}$
(e) $\sqrt{95-14}$

4. Calculate the following.

(a) $(11)^2$
(b) 3^4
(c) 5^3
(d) -1^3
(e) $(-2)^3$

5. Calculate the following.

(a) $(2a)^0$
(b) $3b^0$
(c) $\frac{1}{5} \times \frac{1}{5} \times \frac{1}{5}$
(d) $\frac{f}{2} \times \frac{f}{2} \times \frac{f}{2}$
(e) (-m) × (-m) × (-m) × (-m) × (-m)

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MEMO

1. Square roots. [1.8.3.1]

(a) $\sqrt{16} = 4$
(b) $\sqrt{36} = 6$
(c) $\sqrt{1} = 1$
(d) $\sqrt{100} = 10$
(e) $\sqrt{81} = 9$

2. Cube roots. [1.8.3.2]

(a) $\sqrt[3]{27} = 3$
(b) $(\sqrt[3]{38})^3 = 38$
(c) $\sqrt[3]{216} = 6$
(d) $\sqrt[3]{8} = 2$
(e) $(\sqrt[3]{1})^3 = 1$

3. Operations with square roots. [1.8.3.3]

(a) $\sqrt{16 \times 4}$
$= \sqrt{64}$
$= 8$

(b) $\sqrt{72 \div 8}$
$= \sqrt{9}$
$= 3$

(c) $\sqrt{6+10}$
$= \sqrt{16}$
$= 4$

(d) $\sqrt{121} + \sqrt{36}$
$= 11 + 6$
$= 17$

(e) $\sqrt{95-14}$
$= \sqrt{81}$
$= 9$

4. Exponential laws. [1.8.4.1; 4.3.1.1]

(a) $(11)^2 = 121$
(b) $3^4 = 81$
(c) $5^3 = 125$
(d) $-1^3 = -1$
(e) $(-2)^3 = -8$

5. Calculate the following. [4.3.1.1]

(a) $(2a)^0 = 1$

(b) $3b^0 = 3$

(c) $\frac{1}{5} \times \frac{1}{5} \times \frac{1}{5} = (\frac{1}{125})$

(d) $\frac{f}{2} \times \frac{f}{2} \times \frac{f}{2} = \frac{f^3}{8}$

(e) $(-m) \times (-m) \times (-m) \times (-m) \times (-m) = -m^5$