



Printable Assessments CAMI Maths: Grade 9

Exponential laws

1. Write the following as a normal number.

1.1 $2,609 \times 10^3$

1.2 $3,806 \times 10^{-4}$

2. Calculate the value of the following.

2.1 $9,69 \times 10^4 - 5,95 \times 10^5$

2.2 $\frac{4,93 \times 10^3}{9,09 \times 10^{-5}}$

2.3 $4,72 \times 10^2 \times 1,97 \times 10^{-4}$

3. Use exponential laws to simplify the following.

3.1 $(4d^5n)(4d^6n)(4d^2n^2)$

3.2 $(2p^3)^2$

3.3 $y^2z^4 \times 3y^5z^7$

3.4 $(3n^3)^3 = 27n^9$

3.5 $\frac{d^8 \times d^4}{d^7}$

3.6 $\frac{(-3)^{15}}{(-3)^7}$

3.7 $\frac{3^2d^{-3}}{f^3z^{-2}}$



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MEMO

1. Write the following as a normal number. [1.8.5.5; 1.8.5.7]

1.1 $2,609 \times 10^3 = 2\ 609$

1.2 $3,806 \times 10^{-4} = 0,0003806$

2. Calculate the value of the following. [1.8.5.6]

2.1 $9,69 \times 10^4 - 5,95 \times 10^5$
 $= 0,969 \times 10^5 - 5,95 \times 10^5$
 $= (0,969 - 5,95) \times 10^5$
 $= -4,981 \times 10^5$

2.2 $\frac{4,93 \times 10^3}{9,09 \times 10^{-5}} = 0,5424 \times 10^8 = 5,424 \times 10^7$

2.3 $4,72 \times 10^2 \times 1,97 \times 10^{-4} = (4,72 \times 1,97) \times (10^2 \times 10^{-4}) = 9,2984 \times 10^{-2}$

3. Use exponential laws to simplify the following. [4.3.1.3; 4.3.1.4; 4.4.2.3; 4.3.2.1]

3.1 $(4d^5n)(4d^6n)(4d^2n^2) = 64d^{13}n^4$

3.2 $(2p^3)^2 = 4p^6$

3.3 $y^2z^4 \times 3y^5z^7 = 3y^7z^{11}$

3.4 $(3n^3)^3 = 27n^9$

3.5 $\frac{d^8 \times d^4}{d^7} = \frac{d^{12}}{d^7} = d^5$

3.6 $\frac{(-3)^{15}}{(-3)^7} = (-3)^8$

3.7 $\frac{3^2d^{-3}}{f^3z^{-2}} = \frac{3^2z^2}{d^3f^3}$