

Math Sheet

Name _____ Score _____ / 12 Teacher _____ Date _____

Scientific Notation Operations

Compute exact values and normalize scientific notation.

1. $8.76 \cdot 10^1 \cdot 5.45 \cdot 10^{-2}$

2. $\frac{4.3 \cdot 10^{-2}}{3.12 \cdot 10^3}$

3. $\left(7.75 \cdot 10^3\right)^2$

4. $1.37 \cdot 10^{-4} \cdot 1.39 \cdot 10^5$

5. $\frac{5.93 \cdot 10^5}{3.62 \cdot 10^{-6}}$

6. $\left(8.89 \cdot 10^{-6}\right)^{-3}$

7. $9.87 \cdot 10^7 \cdot 8.63 \cdot 10^{-8}$

8. $\frac{7.19 \cdot 10^{-8}}{4.98 \cdot 10^9}$

9. $\left(3.38 \cdot 10^9\right)^2$

10. $6.63 \cdot 10^{-1} \cdot 6.72 \cdot 10^2$

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Scientific Notation Operations

Compute exact values and normalize scientific notation.

11.
$$\frac{7.48 \cdot 10^2}{1.16 \cdot 10^{-3}}$$

12.
$$\left(9.31 \cdot 10^{-3} \right)^{-3}$$

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Scientific Notation Operations

Answer Key

Compute exact values and normalize scientific notation.

1. $8.76 \cdot 10^1 \cdot 5.45 \cdot 10^{-2}$

Work:

$$8.76 \cdot 10^1 \cdot 5.45 \cdot 10^{-2} = \frac{23871}{5000}$$

$$\frac{23871}{5000} = 4.7742 \cdot 10^0$$

2. $\frac{4.3 \cdot 10^{-2}}{3.12 \cdot 10^3}$

Work:

$$\frac{4.3 \cdot 10^{-2}}{3.12 \cdot 10^3} = \frac{43}{3120000}$$

$$\frac{43}{3120000} \approx 1.378 \cdot 10^{-5}$$

3. $(7.75 \cdot 10^3)^2$

Work:

$$(7.75 \cdot 10^3)^2 = 60062500$$

$$60062500 = 6.00625 \cdot 10^7$$

4. $1.37 \cdot 10^{-4} \cdot 1.39 \cdot 10^5$

Work:

$$1.37 \cdot 10^{-4} \cdot 1.39 \cdot 10^5 = \frac{19043}{1000}$$

$$\frac{19043}{1000} = 1.9043 \cdot 10^1$$

5. $\frac{5.93 \cdot 10^5}{3.62 \cdot 10^{-6}}$

Work:

$$\frac{5.93 \cdot 10^5}{3.62 \cdot 10^{-6}} = \frac{2965000000000}{181}$$

$$\frac{2965000000000}{181} \approx 1.638 \cdot 10^{11}$$

6. $(8.89 \cdot 10^{-6})^{-3}$

Work:

$$(8.89 \cdot 10^{-6})^{-3} = \frac{1000000000000000000000000}{702595369}$$

$$\frac{1000000000000000000000000}{702595369} \approx 1.423 \cdot 10^{15}$$

7. $9.87 \cdot 10^7 \cdot 8.63 \cdot 10^{-8}$

Work:

$$9.87 \cdot 10^7 \cdot 8.63 \cdot 10^{-8} = \frac{851781}{100000}$$

$$\frac{851781}{100000} = 8.51781 \cdot 10^0$$

8. $\frac{7.19 \cdot 10^{-8}}{4.98 \cdot 10^9}$

Work:

$$\frac{7.19 \cdot 10^{-8}}{4.98 \cdot 10^9} = \frac{719}{4980000000000000000}$$

$$\frac{719}{4980000000000000000} \approx 1.444 \cdot 10^{-17}$$

9. $(3.38 \cdot 10^9)^2$

Work:

$$(3.38 \cdot 10^9)^2 = 11424400000000000000$$

$$11424400000000000000 = 1.14244 \cdot 10^{19}$$

10. $6.63 \cdot 10^{-1} \cdot 6.72 \cdot 10^2$

Work:

$$6.63 \cdot 10^{-1} \cdot 6.72 \cdot 10^2 = \frac{55692}{125}$$

$$\frac{55692}{125} = 4.45536 \cdot 10^2$$

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Compute exact values and normalize scientific notation.

11.
$$\frac{7.48 \cdot 10^2}{1.16 \cdot 10^{-3}}$$

Work:

$$\frac{7.48 \cdot 10^2}{1.16 \cdot 10^{-3}} = \frac{1870000}{29}$$
$$\frac{1870000}{29} \approx 6.448 \cdot 10^5$$

12.
$$\left(9.31 \cdot 10^{-3} \right)^{-3}$$

Work:

$$\left(9.31 \cdot 10^{-3} \right)^{-3} = \frac{1000000000000000}{806954491}$$
$$\frac{1000000000000000}{806954491} \approx 1.239 \cdot 10^6$$