Finding Relative Value with Powers of Ten

Name:

Solve each problem. Answer as a decimal (if necessary).

1) 8×10^4 is _____ × the value of 9×10^7

2) 4×10^8 is _____ × the value of 9×10^9

3) 9×10^8 is _____ × the value of 3×10^4

4) 2×10^9 is _____ × the value of 8×10^2

5) 4×10^8 is _____ × the value of 5×10^3

6) 7×10^8 is _____ × the value of 9×10^5

7) 8×10^4 is _____ × the value of 6×10^8

8) 8×10^4 is _____ × the value of 7×10^8

9) 2×10^2 is _____ × the value of 9×10^7

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

1-9	89	78	67	56	44	33	22	11	0

Finding Relative Value with Powers of Ten Name: **Answer Key**

Solve each problem. Answer as a decimal (if necessary).

1) 8×10^4 is _____ × the value of 9×10^7

$\frac{8 \times 10^4}{9 \times 10^7} = \frac{8}{9} \times \frac{10^4}{10^7} = \frac{8}{9} \times 10^{-3} = 0.889 \times 10^{-3}$

2) 4×10^8 is _____ × the value of 9×10^9

$\frac{4 \times 10^8}{9 \times 10^9} = \frac{4}{9} \times \frac{10^8}{10^9} = \frac{4}{9} \times 10^{-1} = 0.444 \times 10^{-1}$

3) 9×10^8 is _____ × the value of 3×10^4

$\frac{9 \times 10^8}{3 \times 10^4} = \frac{9}{3} \times \frac{10^8}{10^4} = \frac{3}{1} \times 10^4 = 3 \times 10^4$

4) 2×10^9 is _____ × the value of 8×10^2

$\frac{2 \times 10^9}{8 \times 10^2} = \frac{2}{8} \times \frac{10^9}{10^2} = \frac{1}{4} \times 10^7 = 0.25 \times 10^7$

5) 4×10^8 is _____ × the value of 5×10^3

$\frac{4 \times 10^8}{5 \times 10^3} = \frac{4}{5} \times \frac{10^8}{10^3} = \frac{4}{5} \times 10^5 = 0.8 \times 10^5$

6) 7×10^8 is _____ × the value of 9×10^5

$\frac{7 \times 10^8}{9 \times 10^5} = \frac{7}{9} \times \frac{10^8}{10^5} = \frac{7}{9} \times 10^3 = 0.778 \times 10^3$

7) 8×10^4 is _____ × the value of 6×10^8

$\frac{8 \times 10^4}{6 \times 10^8} = \frac{8}{6} \times \frac{10^4}{10^8} = \frac{4}{3} \times 10^{-4} = 1.333 \times 10^{-4}$

8) 8×10^4 is _____ × the value of 7×10^8

$\frac{8 \times 10^4}{7 \times 10^8} = \frac{8}{7} \times \frac{10^4}{10^8} = \frac{8}{7} \times 10^{-4} = 1.143 \times 10^{-4}$

9) 2×10^2 is _____ × the value of 9×10^7

$\frac{2 \times 10^2}{9 \times 10^7} = \frac{2}{9} \times \frac{10^2}{10^7} = \frac{2}{9} \times 10^{-5} = 0.222 \times 10^{-5}$

Answers

1. **0.000889**
2. **0.0444**
3. **30,000**
4. **2,500,000**
5. **80,000**
6. **778**
7. **0.0001333**
8. **0.0001143**
9. **0.00000222**

1-9	89	78	67	56	44	33	22	11	0