Finding Relative Value with Powers of Ten

Name:

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

1) 3×10^3 is _____ × the value of 6×10^7

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

3) 2×10^9 is _____ × the value of 4×10^4

4) 5×10^2 is _____ × the value of 6×10^8

5) 6×10^4 is _____ × the value of 7×10^3

6) 5×10^9 is _____ × the value of 6×10^2

7) 2×10^8 is _____ × the value of 4×10^9

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

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

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) 3×10^3 is _____ × the value of 6×10^7

$$\frac{3 \times 10^3}{6 \times 10^7} = \frac{3}{6} \times \frac{10^3}{10^7} = \frac{1}{2} \times 10^{-4} = 0.5 \times 10^{-4}$$

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

$$\frac{9 \times 10^2}{8 \times 10^4} = \frac{9}{8} \times \frac{10^2}{10^4} = \frac{9}{8} \times 10^{-2} = 1.125 \times 10^{-2}$$

3) 2×10^9 is _____ × the value of 4×10^4

$$\frac{2 \times 10^9}{4 \times 10^4} = \frac{2}{4} \times \frac{10^9}{10^4} = \frac{1}{2} \times 10^5 = 0.5 \times 10^5$$

4) 5×10^2 is _____ × the value of 6×10^8

$$\frac{5 \times 10^2}{6 \times 10^8} = \frac{5}{6} \times \frac{10^2}{10^8} = \frac{5}{6} \times 10^{-6} = 0.833 \times 10^{-6}$$

5) 6×10^4 is _____ × the value of 7×10^3

$$\frac{6 \times 10^4}{7 \times 10^3} = \frac{6}{7} \times \frac{10^4}{10^3} = \frac{6}{7} \times 10^1 = 0.857 \times 10^1$$

6) 5×10^9 is _____ × the value of 6×10^2

$$\frac{5 \times 10^9}{6 \times 10^2} = \frac{5}{6} \times \frac{10^9}{10^2} = \frac{5}{6} \times 10^7 = 0.833 \times 10^7$$

7) 2×10^8 is _____ × the value of 4×10^9

$$\frac{2 \times 10^8}{4 \times 10^9} = \frac{2}{4} \times \frac{10^8}{10^9} = \frac{1}{2} \times 10^{-1} = 0.5 \times 10^{-1}$$

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

$$\frac{6 \times 10^8}{5 \times 10^6} = \frac{6}{5} \times \frac{10^8}{10^6} = \frac{6}{5} \times 10^2 = 1.2 \times 10^2$$

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

$$\frac{9 \times 10^3}{3 \times 10^8} = \frac{9}{3} \times \frac{10^3}{10^8} = \frac{3}{1} \times 10^{-5} = 3 \times 10^{-5}$$

Answers

1. **0.00005**
2. **0.01125**
3. **50,000**
4. **0.000000833**
5. **8.57**
6. **8,330,000**
7. **0.05**
8. **120**
9. **0.0000**

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