

1.4 Exponents and Radicals

1)

a) 12

b) 81

3) $(-1)^{\text{odd power}} = -1$ and $(-1)^{\text{even power}} = 1$.

5)

	Answer as a Fraction	Answer as a Decimal
10^0	$1 = \frac{1}{1}$	1
10^{-1}	$\frac{1}{10^1} = \frac{1}{10}$	0.1
10^{-2}	$\frac{1}{10^2} = \frac{1}{10 \cdot 10} = \frac{1}{100}$	0.01
10^{-3}	$\frac{1}{10^3} = \frac{1}{10 \cdot 10 \cdot 10} = \frac{1}{1000}$	0.001

7)

a) $1.089 \cdot 10^3 \frac{\text{ft}}{\text{sec}}$

b) $4.84 \cdot 10^8 \text{ mi}$

c) $2 \cdot 10^{-9} \text{ m}$

9)

a) $9.60 \cdot 10^{-5} \frac{\text{°F}}{\text{day}} = 0.000096 \frac{\text{°F}}{\text{day}}$.

b) 13,770,000,000 g of protein

11)

a) $\sqrt{10} \approx 3.1$.

b) $\sqrt{42} \approx 6.5$

c) $\sqrt{80} \approx 8.9$

15)

b) 3 in

17) 7,000 (or 7×10^3); that is, the 7 is the thousands digit of the number.

19)

a) 21.0 m

b) $21 \frac{\text{ft}}{\text{min}}$

c) 927.6 cm