

## Chapter 1 Real Numbers

### Lesson 1-2 Powers and Exponents

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**In the United States, nearly  $8 \cdot 10^9$  text messages are sent every month. About how many text messages is this?**

$$\begin{aligned} 8 \cdot 10^9 &= 8 \cdot 1,000,000,000 && \text{Evaluate } 8 \cdot 10^9. \\ &= 8,000,000,000 \text{ or 8 billion} \end{aligned}$$

So, about 8 billion text messages are sent every month in the United States.



**Evaluate  $g^5 - h^3$  if  $g = 2$  and  $h = 7$ .**

$$\begin{aligned} g^5 - h^3 &= (2)^5 - (7)^3 && \text{Replace } g \text{ with } 2 \text{ and } h \text{ with } 7. \\ &= 2 \times 2 \times 2 \times 2 \times 2 - 7 \times 7 \times 7 && \text{Write the powers as products.} \\ &= 32 - 343 && \text{Multiply.} \\ &= -311 && \text{Add.} \end{aligned}$$