

6 Square Roots and the Pythagorean Theorem

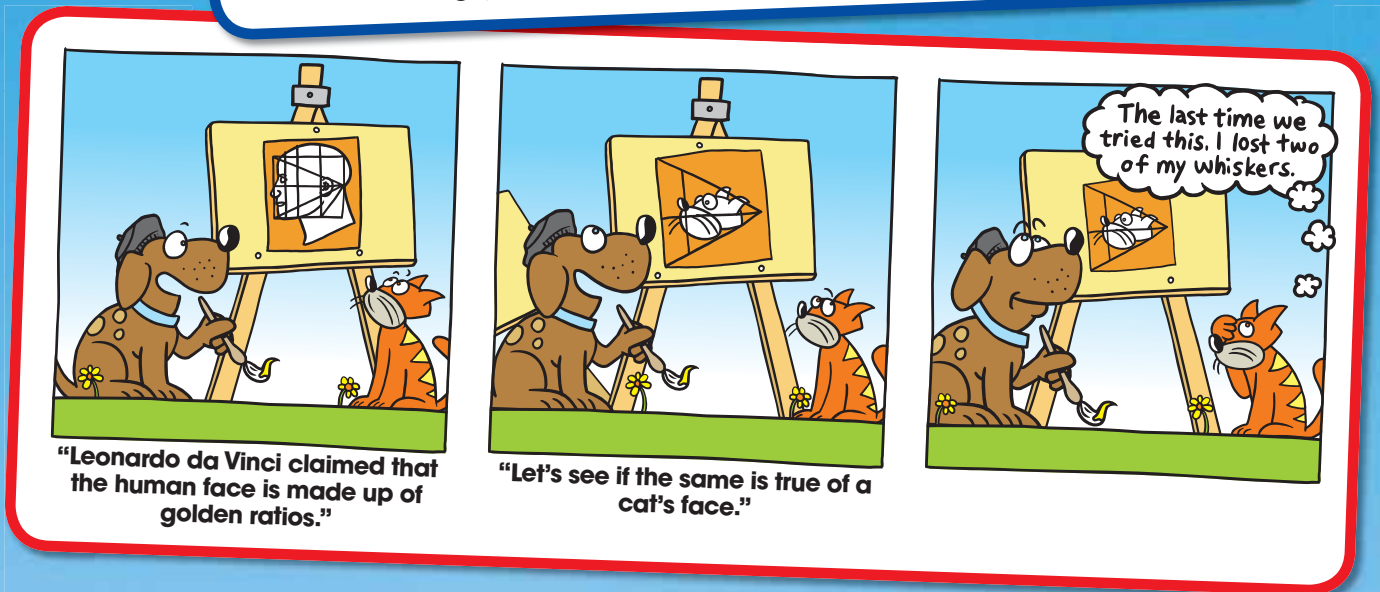
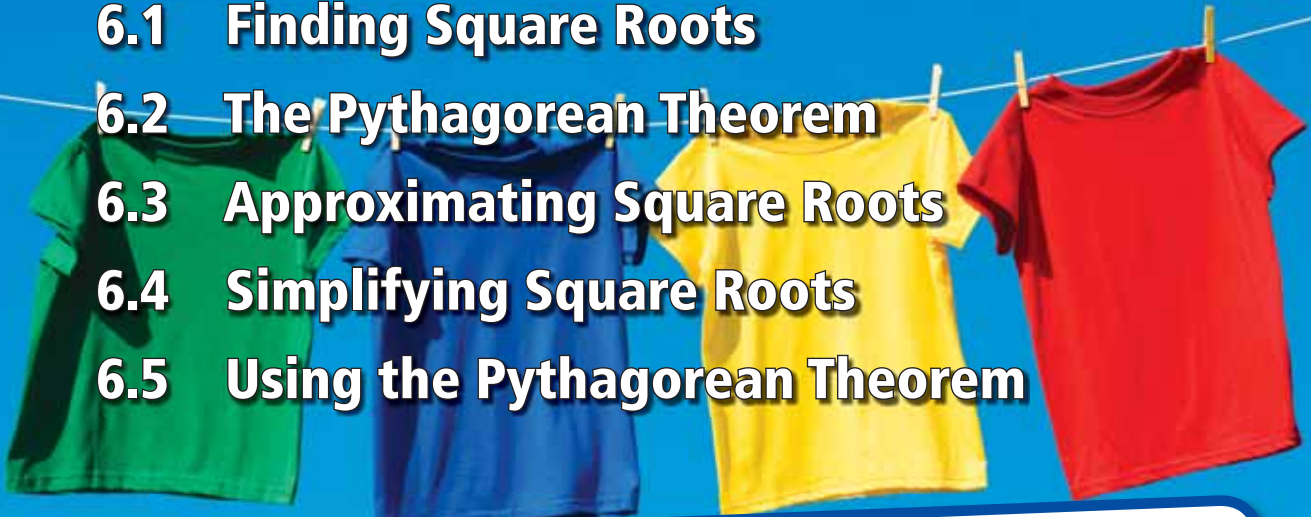
6.1 Finding Square Roots

6.2 The Pythagorean Theorem

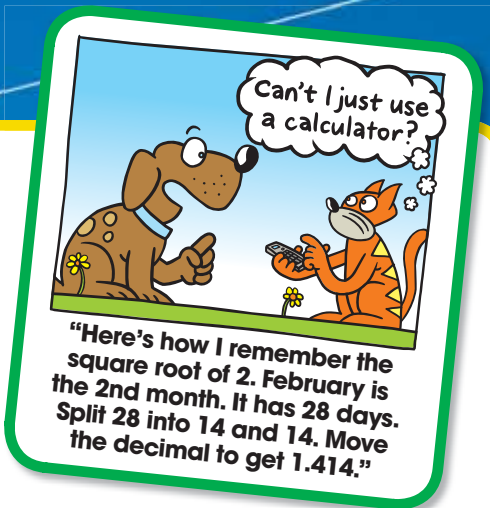
6.3 Approximating Square Roots

6.4 Simplifying Square Roots

6.5 Using the Pythagorean Theorem



What You Learned Before



Comparing Decimals

Complete the number sentence with $<$, $>$, or $=$.

Example 1 1.1 1.01

Because $\frac{110}{100}$ is greater than $\frac{101}{100}$,
1.1 is greater than 1.01.

∴ So, $1.1 > 1.01$.

Example 2 -0.3 -0.003

Because $-\frac{300}{1000}$ is less than $-\frac{3}{1000}$,
 -0.3 is less than -0.003 .

∴ So, $-0.3 < -0.003$.

Example 3 Find three decimals that make the number sentence $-5.12 >$ true.

Any decimal less than -5.12 will make the sentence true.

∴ *Sample answer:* $-10.1, -9.05, -8.25$

Try It Yourself

Complete the number sentence with $<$, $>$, or $=$.

1. 2.10 2.1

2. -4.5 -4.25

3. π 3.2

Find three decimals that make the number sentence true.

4. $-0.01 \leq$

5. $1.75 >$

6. $0.75 \geq$

Using Order of Operations

Example 4 Evaluate $8^2 \div (32 \div 2) - 2(3 - 5)$.

First: Parentheses

$$8^2 \div (32 \div 2) - 2(3 - 5) = 8^2 \div 16 - 2(-2)$$

Second: Exponents

$$= 64 \div 16 - 2(-2)$$

Third: Multiplication and Division (from left to right)

$$= 4 + 4$$

Fourth: Addition and Subtraction (from left to right)

$$= 8$$

Try It Yourself

Evaluate the expression.

7. $15\left(\frac{12}{3}\right) - 7^2 - 2 \cdot 7$

8. $3^2 \cdot 4 \div 18 + 30 \cdot 6 - 1$

9. $-1 + \left(\frac{4}{2}(6 - 1)\right)^2$