

ONE SOLUTION

$$-16 + 4m = -4(4 + 5m)$$

$$-16 + 4m = -16 - 20m$$

$$+16 + 20m \quad +16 + 20m$$

$$\frac{24m}{24} = \frac{0}{24}$$

$$m = 0$$

NO SOLUTIONS

$$6x - 5 = 2(3x + 4)$$

$$\cancel{6x} - 5 = \cancel{6x} + 8$$

$$-6x \quad -6x$$

$$-5 \neq 8$$

no solutions

• no value of x that satisfies the equation

• anytime variables cancel out and what's left is not true

INFINITE SOLUTIONS

∞

$$2(4x - 3) = 8x - 6$$

$$\cancel{8x} - 6 = \cancel{8x} - 6$$

$$-8x \quad -8x$$

$$-6 = -6$$

∞ solutions

• any value of x satisfies the equation

• anytime variables cancel out and what's left is true
• aka "an identity"