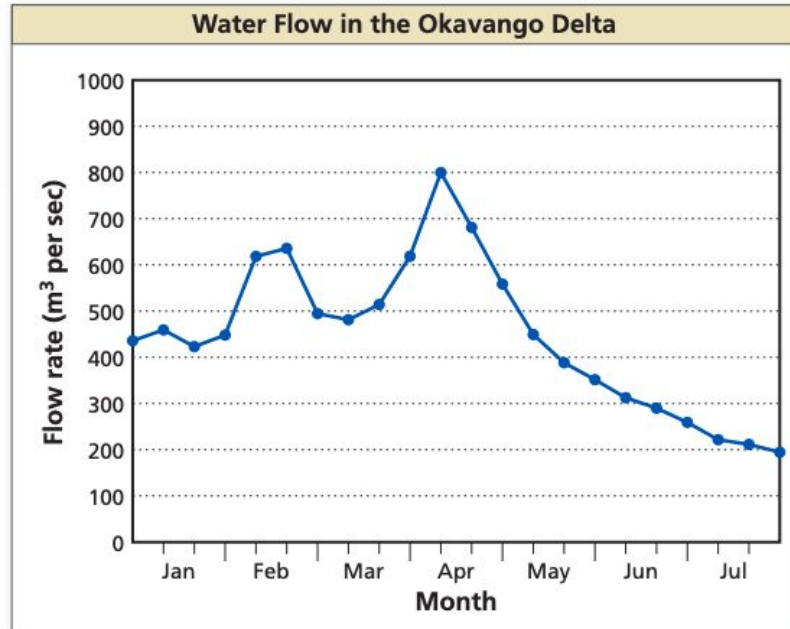## Bell Work

What number minus three is equal to negative five?

The Okavango Delta is the largest freshwater wetland in southern Africa and is the main source of water for one million people.

a. What does the graph show? Make several observations from the graph.

b. When the water flow was at its peak, about how long did it take 100,000 cubic meters of water to flow past a point in the Okavango Delta? Explain your reasoning.

Water Flow in the Okavango Delta

A line graph with the vertical axis labeled "Flow rate (m³ per sec)" ranging from 0 to 1000 in increments of 100, and the horizontal axis labeled "Month" with values Jan, Feb, Mar, Apr, May, Jun, Jul.

The Okavango Delta is the largest freshwater wetland in southern Africa and is the main source of water for one million people.

$$f = 800t$$

$$100,000 = 800t$$

$$\frac{100,000}{800} = t$$

$$\frac{1000}{8} = t$$

$$125 \, sec = t$$

$$m^3 \div \frac{m^3}{sec} = m^3 \times \frac{sec}{m^3} = sec$$

c. Your friend uses an equation to answer part (b) as shown. Is your friend's reasoning valid? Explain.

KEY IDEA

Addition, Subtraction, and Substitution Properties of Equality

Adding or subtracting the same number on each side of an equation produces an equivalent equation.

Addition Property of Equality   If $a = b$, then $a + c = b + c$.

Subtraction Property of Equality   If $a = b$, then $a - c = b - c$.

Substitution Property of Equality   If $a = b$, then a can be substituted for b (or b for a) in any equation or expression.

Are the equations 6x = −5 and −1 = 6x + 4 equivalent? Explain your reasoning

KEY IDEA

Multiplication and Division Properties of Equality

Multiplying or dividing each side of an equation by the same nonzero number produces an equivalent equation.

Multiplication Property of Equality   If $a = b$, then $a \cdot c = b \cdot c$, $c \neq 0$.

Division Property of Equality   If $a = b$, then $\dfrac{a}{c} = \dfrac{b}{c}$, $c \neq 0$.

Which equation does not belong with the other three? Explain your reasoning.

$8 = \dfrac{x}{2}$

$3 = x \div 4$

$x - 6 = 5$

$\dfrac{x}{3} = 9$

Solving Real-Life Problems

KEY IDEA

Problem-Solving Plan

1. **Understand the Problem** What is the unknown? What information is given? What is being asked?

2. **Make a Plan** Decide how you will solve the problem. Your plan might involve one or more of the problem-solving strategies shown on the next page.

3. **Solve and Check** Carry out your plan. Examine your solution. Then check that your solution makes sense in the original statement of the problem.

In the 2016 Olympics, Usain Bolt won the 200-meter dash with a time of 19.78 seconds. Find his average speed to the nearest hundredth of a meter per second.

On January 22, 1943, the temperature in Spearfish, South Dakota, fell from 54°F at 9:00 a.m. to − 4°F at 9:27 a.m. How many degrees did the temperature fall?

In one year, a bluefin tuna releases 300% more eggs than an Atlantic sturgeon. The bluefin tuna releases about 10,000,000 eggs. About how many eggs does the Atlantic sturgeon release?