



## 4-5 Additional Practice

### Solving Rational Equations

Solve each equation.

1.  $\frac{1}{x+4} = 5$

2.  $\frac{1}{x-3} = 6$

3.  $\frac{1}{x+2} = 5$

4.  $\frac{1}{2x-3} = \frac{1}{5-2x}$

5.  $2 - \frac{1}{x+3} = \frac{1}{x+3}$

6.  $\frac{2}{x-3} = \frac{3}{x}$

7.  $\frac{1}{x+3} + \frac{1}{x-3} = \frac{6}{x^2-9}$

8.  $\frac{4}{x+2} = \frac{x^2}{x+2}$

9.  $\frac{x^2}{x+10} = \frac{100}{x+10}$

10. A fountain has two drainage valves. With only the first valve open, the fountain completely drains in 4 h. With only the second valve open, the fountain completely drains in 5.25 h. About how many hours will the fountain take to completely drain with both valves open? Round your answer to the nearest tenth.
11. Kayden paddled a canoe to an island. The island is 8 miles from the shore. His trip to the island took two hours while paddling against the current. He paddles 6 mph with no current. What was the speed of the current?
12. An airplane flies from its headquarters at night to a city 510 miles away and returns back the next morning. The total flying time for the round-trip flight is 3.9 h. The plane travels the first half of the trip at 255 mph with no wind.
- How strong is the wind on the return flight? Round your answer to the nearest tenth.
  - Is the wind on the return flight a headwind or a tailwind?



## 4-5 Additional Practice

### Solving Rational Equations

Solve each equation.

1.  $\frac{1}{x+4} = 5$

$$x = -\frac{19}{5}$$

2.  $\frac{1}{x-3} = 6$

$$x = \frac{19}{6}$$

3.  $\frac{1}{x+2} = 5$

$$x = -\frac{9}{5}$$

4.  $\frac{1}{2x-3} = \frac{1}{5-2x}$

$$x = 2$$

5.  $2 - \frac{1}{x+3} = \frac{1}{x+3}$

$$x = -2$$

6.  $\frac{2}{x-3} = \frac{3}{x}$

$$x = 9$$

7.  $\frac{1}{x+3} + \frac{1}{x-3} = \frac{6}{x^2-9}$

**no solutions**

8.  $\frac{4}{x+2} = \frac{x^2}{x+2}$

$$x = 2$$

9.  $\frac{x^2}{x+10} = \frac{100}{x+10}$

$$x = 10$$

10. A fountain has two drainage valves. With only the first valve open, the fountain completely drains in 4 h. With only the second valve open, the fountain completely drains in 5.25 h. About how many hours will the fountain take to completely drain with both valves open? Round your answer to the nearest tenth.

**2.3 hours**

11. Kayden paddled a canoe to an island. The island is 8 miles from the shore. His trip to the island took two hours while paddling against the current. He paddles 6 mph with no current. What was the speed of the current?

**2 mph**

12. An airplane flies from its headquarters at night to a city 510 miles away and returns back the next morning. The total flying time for the round-trip flight is 3.9 h. The plane travels the first half of the trip at 255 mph with no wind.

- a. How strong is the wind on the return flight? Round your answer to the nearest tenth.

**13.4 mph**

- b. Is the wind on the return flight a headwind or a tailwind?

**A tailwind, because the trip is faster on the way back to headquarters.**