

1. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{\kappa + 1}{\kappa} + \frac{8}{\kappa - 4} = \frac{8\kappa - 4}{\kappa^2 - 4\kappa}$$

- A. This equation has no solution.
- B. $\kappa = 4$
- C. $\kappa = 0$
- D. $\kappa = 0$ or $\kappa = 4$
- E. $\kappa = -1$
- F. $\kappa = 0$ or $\kappa = 0$
- G. $\kappa = 3$
- H. $\kappa = 0$ or $\kappa = 3$

2. Solve the rational equation. Be sure to check for extraneous solutions.

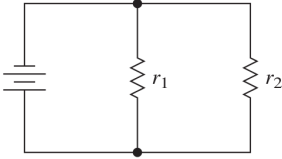
$$\frac{\theta + 7}{36\theta^2 - 42\theta - 18} = \frac{\theta}{6\theta - 9} - \frac{\theta}{6\theta + 2}$$

- A. $\theta = \frac{7}{10}$
- B. $\theta = \frac{27}{10}$
- C. This equation has no solution.
- D. $\theta = \frac{9}{20}$
- E. $\theta = 0$ or $\theta = -\frac{13}{10}$
- F. $\theta = \frac{6}{5}$
- G. $\theta = 0$ or $\theta = \frac{11}{30}$
- H. $\theta = 0$ or $\theta = \frac{1}{30}$

3. Electrical Resistance The total resistance R in a parallel circuit with two individual resistors r_1 and r_2 can be calculated by using the formula

$$\frac{1}{R} = \frac{1}{r_1} + \frac{1}{r_2}.$$

The resistance planned by an electrical technician for a parallel electric circuit with two resistors is 16.88Ω . The resistance of r_2 must be 6 times the resistance of r_1 . Determine the resistance of each resistor. Round your answer to the nearest hundredth of an ohm.



- A. $r_1 = 19.93 \Omega$ and $r_2 = 119.56 \Omega$.
- B. $r_1 = 19.11 \Omega$ and $r_2 = 114.66 \Omega$.
- C. $r_1 = 19.69 \Omega$ and $r_2 = 118.16 \Omega$.
- D. $r_1 = 19.34 \Omega$ and $r_2 = 116.06 \Omega$.
- E. $r_1 = 19.58 \Omega$ and $r_2 = 117.46 \Omega$.
- F. $r_1 = 20.16 \Omega$ and $r_2 = 120.96 \Omega$.
- G. $r_1 = 20.51 \Omega$ and $r_2 = 123.06 \Omega$.
- H. $r_1 = 20.04 \Omega$ and $r_2 = 120.26 \Omega$.

4. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{\rho + 1}{\rho} + \frac{8}{\rho - 4} = \frac{9\rho - 4}{\rho^2 - 4\rho}$$

- A. $\rho = 4$
- B. $\rho = 0$ or $\rho = 0$
- C. $\rho = 6$
- D. $\rho = 0$ or $\rho = 10$
- E. $\rho = 10$
- F. $\rho = 0$ or $\rho = 4$
- G. $\rho = 0$
- H. This equation has no solution.

5. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{2}{\varphi + 4} - 3 = \frac{1}{\varphi + 4}$$

A. $\varphi = -\frac{43}{15}$

B. $\varphi = -\frac{17}{3}$

C. $\varphi = -4$

D. $\varphi = -\frac{13}{3}$

E. $\varphi = -\frac{5}{3}$

F. This equation has no solution.

G. $\varphi = -\frac{11}{3}$

H. $\varphi = -\frac{53}{12}$

6. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{4}{j + 4} - 5 = \frac{4}{j + 4}$$

A. $j = -\frac{10}{3}$

B. $j = -\frac{14}{3}$

C. $j = -4$

D. $j = -\frac{24}{5}$

E. $j = -\frac{22}{5}$

F. $j = -2$

G. This equation has no solution.

H. $j = -\frac{17}{5}$

7. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{v^2 - 7v + 8}{9v^2 + 23v - 12} + \frac{2}{v + 3} = \frac{v}{9v - 4}$$

A. $v = -\frac{4}{5}$

B. $v = -\frac{1}{5}$

C. $v = 0$ or $v = -\frac{3}{4}$

D. $v = 0$ or $v = -\frac{2}{3}$

E. $v = -\frac{2}{5}$

F. This equation has no solution.

G. $v = 0$ or $v = -1$

H. $v = 0$

8. Solve the rational equation. Be sure to check for extraneous solutions.

$$\frac{1}{\kappa^2 - 13\kappa + 36} - \frac{1}{\kappa^2 + 4\kappa - 32} + \frac{7}{\kappa^2 - \kappa - 72} = 0$$

A. $\kappa = 0$ or $\kappa = \frac{47}{21}$

B. This equation has no solution.

C. $\kappa = 0$ or $\kappa = \frac{11}{7}$

D. $\kappa = \frac{62}{35}$

E. $\kappa = -\frac{3}{7}$

F. $\kappa = \frac{11}{7}$

G. $\kappa = 4$

H. $\kappa = 0$ or $\kappa = \frac{62}{35}$