

More rational equations practice (A2 5.5)

Solve each equation. Remember to check for extraneous solutions.

1)
$$\frac{n-8}{n^2-9n} = \frac{9n-27}{n^2-9n} + \frac{1}{n-9}$$

2)
$$\frac{1}{m} + \frac{1}{m^2-10m} = \frac{6}{m^2-10m}$$

3)
$$\frac{9}{x^2+10x} - \frac{1}{x+10} = \frac{12}{x^2+10x}$$

4)
$$\frac{1}{v-5} = \frac{1}{2v^2-26v+80} + \frac{v+2}{6v^2-78v+240}$$

5)
$$\frac{x-11}{35x} = \frac{1}{7x} + \frac{1}{5}$$

6)
$$\frac{5}{7n} = \frac{11}{7n} + 1$$

7)
$$\frac{1}{a-1} = 1 + \frac{4}{a-1}$$

8)
$$\frac{x}{x^2-9x+18} = \frac{1}{2x-12} + \frac{5}{2x^2-18x+36}$$

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

$$10) \frac{k+4}{k+6} - \frac{k^2-6k+8}{k^2+6k} = \frac{2k-14}{k^2+6k}$$

$$11) \frac{1}{n+5} = \frac{6}{n^2+5n} - \frac{n^2+5n-66}{n^2+5n}$$

$$12) \frac{12p+144}{p^2+11p} = \frac{11}{p+11} + 1$$

$$13) \frac{p+8}{p-2} = \frac{p^2-15p+54}{p-2} + 1$$

$$14) \frac{1}{n+11} = \frac{n-10}{5n+55} + \frac{n^2+n-20}{5n+55}$$

$$15) \frac{1}{11n^2-2n} + \frac{n^2+8n+12}{11n^2-2n} = \frac{n+9}{11n-2}$$

$$16) \frac{4}{n-10} = \frac{n^2+21n+110}{3n-30} + \frac{n+7}{3n-30}$$

Answers to More rational equations practice (A2 5.5)

1) $\left\{\frac{19}{9}\right\}$

2) $\{15\}$

3) $\{-3\}$

4) $\left\{\frac{53}{5}\right\}$

5) $\left\{-\frac{8}{3}\right\}$

6) $\left\{-\frac{6}{7}\right\}$

7) $\{-2\}$

8) $\{2\}$

9) $\left\{\frac{2}{3}, -1\right\}$

10) $\left\{-\frac{3}{4}\right\}$

11) $\{6, -12\}$

12) $\{8, -18\}$

13) $\{11, 4\}$

14) $\{5, -7\}$

15) $\{13\}$

16) $\{-15, -7\}$