

**A2.A.23: Solving Rationals 1: Solve rational equations and inequalities**

- 1 What is the solution set of the equation  $\frac{30}{x^2-9} + 1 = \frac{5}{x-3}$ ?
  - 1) {2,3}
  - 2) {2}
  - 3) {3}
  - 4) { }
- 2 Solve for x:  $\frac{4x}{x-3} = 2 + \frac{12}{x-3}$
- 3 Solve for x:  $\frac{2}{x} + \frac{3}{5x} = 1$
- 4 Solve for x:  $\frac{2}{3x} + 5 = \frac{4}{x}$
- 5 Solve for all values of x:  $\frac{9}{x} + \frac{9}{x-2} = 12$
- 6 Solve for x:  $\frac{4x}{x+2} - \frac{12}{x} = 1$
- 7 Solve:  $3 - \frac{2}{x} = \frac{6}{x+1}$
- 8 Solve:  $2x - \frac{1}{2} = \frac{x-1}{x+1} + x + 2$
- 9 Solve for y:  $\frac{y}{y-1} = \frac{8}{y} + \frac{1}{y-1}$
- 10 For all values of x for which the expression is defined, solve for x:  $\frac{3}{x+3} + \frac{2}{x-4} = \frac{4}{3}$
- 11 Solve for x:  $\frac{12}{x^2-16} - \frac{24}{x-4} = 3$
- 12 What is the solution set of the equation  $\frac{x}{x-4} - \frac{1}{x+3} = \frac{28}{x^2-x-12}$ ?
  - 1) { }
  - 2) {4,-6}
  - 3) {-6}
  - 4) {4}
- 13 Solve for all values of x:  $\frac{2x}{x+3} + \frac{3}{x-3} = \frac{8}{x^2-9}$
- 14 Solve for x:  $\frac{x}{x+5} + \frac{9}{x-5} = \frac{50}{x^2-25}$
- 15 Solve for x:  $\frac{x}{x-5} - \frac{2}{x+5} = \frac{50}{x^2-25}$
- 16 Solve algebraically for x:  $\frac{1}{x+3} - \frac{2}{3-x} = \frac{4}{x^2-9}$
- 17 Solve:  $\frac{x+4}{x-4} - \frac{x-4}{x+4} = 4\frac{4}{5}$
- 18 Which equation is equivalent to  $1 - \frac{6}{t^2} = \frac{1}{t}$ ?
  - 1)  $(t-3)(t+2) = 0$
  - 2)  $(t-2)(t+3) = 0$
  - 3)  $(2t+1)(3t-1) = 0$
  - 4)  $(2t-1)(3t+1) = 0$
- 19 Working by herself, Mary requires 16 minutes more than Antoine to solve a mathematics problem. Working together, Mary and Antoine can solve the problem in 6 minutes. If this situation is represented by the equation  $\frac{6}{t} + \frac{6}{t+16} = 1$ , where t represents the number of minutes Antoine works alone to solve the problem, how many minutes will it take Antoine to solve the problem if he works by himself?