Equations with rational solutions

6 questions | 13 marks

Equivalent correct methods earn the corresponding marks.

1. Solve $2x = 7$. [2 marks]

Divide both sides by 2.

Check $2(\frac{7}{2}) = 7$.

Answer: $x = \frac{7}{2}$.

2. Solve $5x + 2 = 4$. [2 marks]

Subtract 2 to get $5x = 2$.

Divide by 5.

Answer: $x = \frac{2}{5}$.

3. Solve $3x - 1 = -3$. [2 marks]

Add 1 to get $3x = -2$.

Divide by 3.

Answer: $x = -\frac{2}{3}$.

4. Solve $\frac{x+1}{4} = \frac{3}{2}$. [2 marks]

Multiply both sides by 4: $x + 1 = 6$.

Subtract 1.

Answer: $x = 5$.

5. Solve $0.5x + 1.2 = 3.7$. [2 marks]

Subtract 1.2: $0.5x = 2.5$.

Divide by 0.5.

Answer: $x = 5$.

6. Solve $\frac{x}{2} + \frac{x}{3} = 5$. [3 marks]

Multiply every term by 6: $3x + 2x = 30$.

Then $5x = 30$; check $3 + 2 = 5$.

Answer: $x = 6$.