Rational equations: checking and applications

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Name: _____ Class: _____ Date: _____

Worked example 1

Solve the equation. State the restrictions and check every candidate in the original equation.

$$\frac{x}{x-2} = \frac{2}{x-2}$$

Guided attempt 2

Solve the equation. State the restrictions and check every candidate in the original equation.

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

1. Restriction x≠___; cleared equation 3=___.
2. Candidate x=___; original denominator=___, so ___.

Prerequisite 3

Before solving any equation containing 1/(x−3), state its forbidden value.

$$\frac{1}{x-3}$$

Prerequisite 4

A team completes one job in 6 days at a constant rate. What fraction of the job does it complete per day?

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Independent practice 5

Solve the equation. State the restrictions and check every candidate in the original equation.

$$\frac{2}{x-1}=1$$

Independent practice 6

Solve the equation. State the restrictions and check every candidate in the original equation.

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

Independent practice 7

Team A alone takes 12 days. A and B together take 4 days. Let x be B’ s days alone. Form and solve a rate equation.

Independent practice 8

Two travellers take the same time. One covers 90 km at x km/h; the other covers 120 km at (x+10) km/h. Find x.

Exit question 9

Solve the equation. State the restrictions and check every candidate in the original equation.

$$\frac{1}{x-1}=\frac{2}{x-1}$$

Exit question 10

Solve the equation. State the restrictions and check every candidate in the original equation.

$$\frac{4}{x}=2$$