2 Math101 answers

2.1 The answers are:

$$x = 6, \qquad x = -\frac{5}{3}, \qquad x = 7, \qquad x = -1.$$

2.2 The answers are:

$$x = \pm 3, \qquad x = 3, x = -7, \qquad x = 1, x = 2, \qquad x = 1, x = -5.$$

2.3 The answers are:

$$x = -2, \qquad x = 14, \qquad x = -\frac{5}{2}.$$

2.4 The answers are:

$$x = 0, x = 3, \qquad x = 0, x = \frac{2}{3}, \qquad x = 0, x = \frac{1}{2}, \qquad x = \pm\frac{2}{5}.$$

2.5 The answer is $a = 7$.

2.6 The answers are:

$$\frac{x-5}{x-1}, \qquad \frac{x-1}{x-3}, \qquad x - 5.$$

2.7 The answer is $a = \frac{4}{9}$.

2.8 The sets of all solutions are:

$$\mathbb{R}, \qquad \emptyset.$$

2.9 The answers are:

$$x = \frac{9}{5}, \qquad x = \frac{29}{22}.$$

2.10 The answers are:

$$x = 2, x = -10, \quad x = -5, x = -1, \quad x = \frac{1}{2}, x = \frac{1}{3}, \quad x = \pm 10\sqrt{5}.$$

2.11 The answers are:

$$x = 1 + 2\sqrt{2}, \qquad x = \frac{3(2+\pi)}{\pi - \sqrt{2}}, \qquad x = -\frac{5}{3}.$$

2.12 The answers are:

$$x^2 + 1 - 2x = 0, \qquad x^2 + \frac{2}{3}x - \frac{1}{3} = 0, \qquad x^2 - \sqrt{2}x - 4 = 0.$$

2.13 The answer is $b = \pm 7$.

2.14 The answers are:

$$x = \pm 1, x = \pm 2, \qquad\qquad x = \pm 2, x = \pm\frac{1}{2}.$$