

Selected Solutions from Sections 2.2, 2.4 and 2.5

2.2

2) $x = 11, x = -3$

4) no solutions

8) $x = 4, x = \frac{12}{7}$

10) $x = \frac{1}{4}, x = \frac{3}{2}$

16) $x = 0, x = 4, x = -4$

32) $x = -4 - \sqrt[3]{2}$

36) (a) $x = 2$ and $x = -2$ note: $x^2 = -2$ has no real number solutions

(b) $(x^2 - 1)^4 = -81$ has no real number solutions

50) $t = 8, t = \frac{1}{2}$

56) $t = 4$

64) $x = 8, x = -8$

72) $x = -7$ note: do not include the extraneous root $x = -14$ as it does not satisfy the original equation

74) $x = -\frac{2}{3}$ note: $x = -\frac{7}{4}$ is extraneous.

2.4

12) (a) $\frac{-1+\sqrt{5}}{2}$ (b) no

20) width = 6 meters, length = 8meters

28) 14 years

36) 40cm^3 of 15% solution and 10cm^3 of 20% solution

40) 150 pounds

42) 7cm

48) 1:30pm

50) out@64mph, back @48mph

2.5

2) $(-\infty, 9)$

4) $[-4, \infty)$

6) $[0, \infty)$

14) $[-2, 2]$

16) $[\frac{19}{9}, \frac{13}{6}]$

20) (a) $(-\infty, -2) \cup (2, \infty)$ (b) $[-2, 2]$

26) (a) $(-\infty, 4)$ (b) $(-\frac{22}{3}, 4)$ (c) $(-\infty, -\frac{22}{3}) \cup (4, \infty)$

30) $(-\infty, \frac{2}{5}) \cup (\frac{6}{5}, \infty)$

32) $[\frac{2}{5}, \frac{58}{25}]$

40) $[-218^\circ, -18^\circ]$