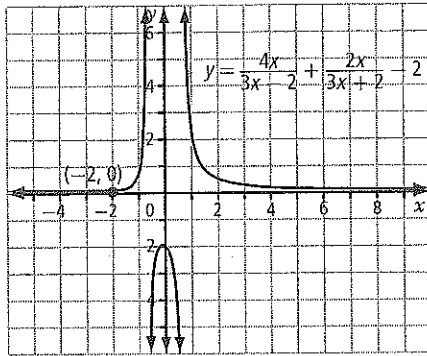


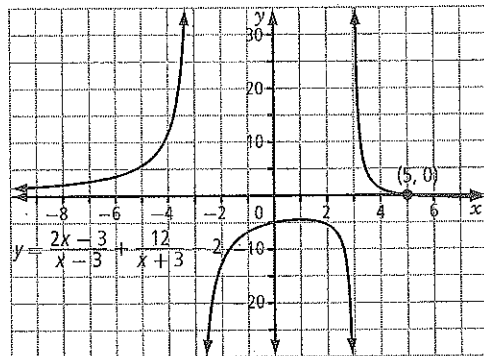
9. Example: Yes. If the polynomial in the denominator is a constant, there will be neither a point of discontinuity nor a vertical asymptote.

9.3 Connecting Graphs and Rational Equations, pages 314–320

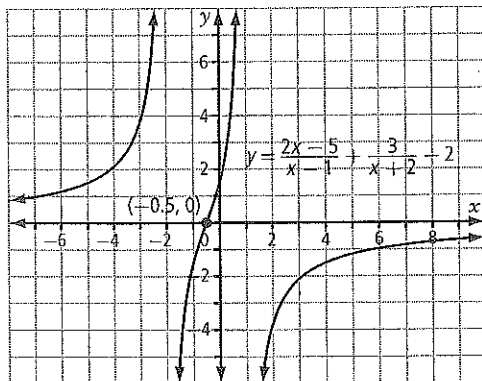
1. a) $x = -2, x = 7$ b) $x = -3, x = -8$
 c) $x = -2$ d) $x = \frac{5}{2}, x = -1$
 2. a) $x = -2$



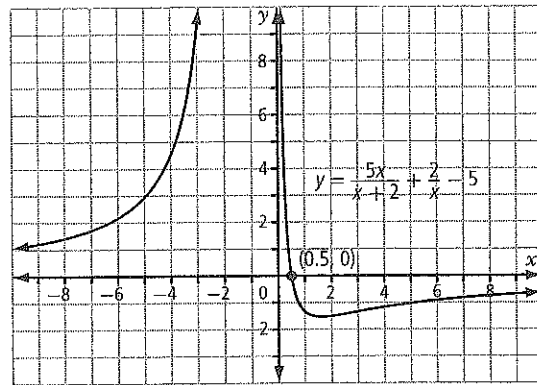
- b) $x = 5$



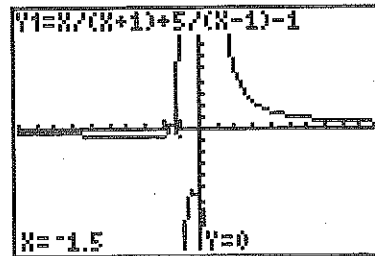
- c) $x = -0.5$



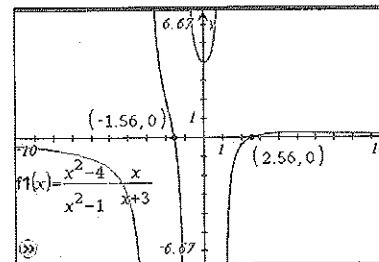
- d) $x = 0.5$



3. a) $x = -1.5$



- b) $x = \frac{1 \pm \sqrt{17}}{2}$ or $x \approx -1.56, x \approx 2.56$



4. a) $x = -5$; no extraneous root
 b) $x = -3$; extraneous root: $x = 1$
 c) $x = -7$; extraneous root: $x = 2$
 d) $x = 2$; extraneous root: $x = -2$

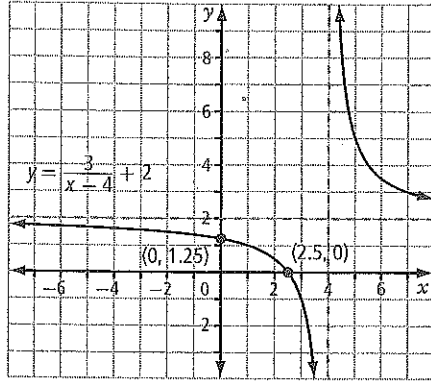
5. a) Amber: $\frac{400}{x}$, Matteo: $\frac{400}{(x-1)}$
 b) $\frac{400}{(x-1)} - \frac{400}{x} = 20$; Amber: 80 km/h,
 Matteo: 100 km/h

6. Example: Solving an equation algebraically gives an exact solution because you can answer as a fraction or a radical, if necessary. Solving graphically gives a whole number value or a decimal approximation.

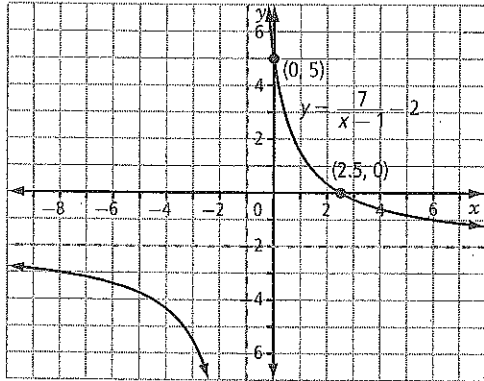
7. Example: Solving algebraically, extraneous solutions are determined by comparing the answer to the restrictions. Solving graphically only solves equations in their simplest form.

Chapter 9 Review, pages 321-323

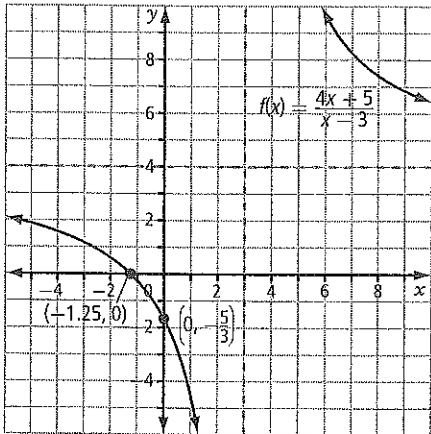
1. a)



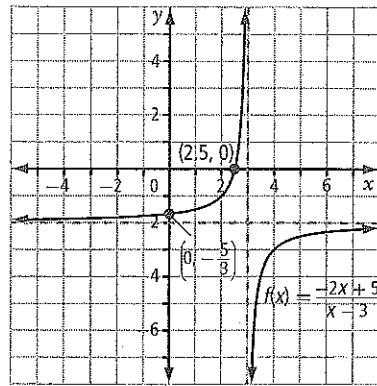
b)



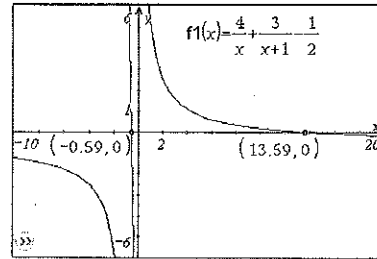
2. a)



b)



3. a) vertical asymptotes at $x = -3$ and $x = 2$, no points of discontinuity, x -intercept of 0; D
- b) vertical asymptote at $x = 6$, point of discontinuity $(-4, 0.7)$, x -intercept of 3; A
- c) point of discontinuity at $(3, 1)$, no vertical asymptotes, x -intercept of 2; C
- d) vertical asymptotes at $x = 1$ and $x = 2$, no points of discontinuity, x -intercepts of -3 and 4 ; B
4. a) no points of discontinuity; vertical asymptote: $x = -5$; x -intercept: $-\frac{1}{2}$; y -intercept: $\frac{1}{5}$
- b) point of discontinuity: $(2, -4)$; no vertical asymptotes; x -intercept: 6 ; y -intercept: -6
5. a) $x = -4, x = -6$ b) $x = 2, x = 6$
- c) $x = -7$ d) $x = -2, x = 5$
6. a) $x \approx -0.6, x \approx 13.6$



b) $x \approx -2.1, x \approx 5.3$

