

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1a. $f(x) = (11x + 9)(x - 6)$
 $x = -9/11$ $x = 6$

b. $g(x) = x^2 - 9^2$
 $(x+3)(x-3)$
 $x = 3$ $x = -3$

d. $j(x) = 12x^2 + 2$
 $2(6x^2 + 1)$
 $6x^2 + 1 = 0$
 $\frac{6x^2}{6} = \frac{-1}{6}$
 $\sqrt{x^2} = \sqrt{-\frac{1}{6}}$ DNE

2. $f(x) = c \cdot (x - x_1)(x - x_2)$
 $x_1 < x_2 \rightarrow -3 < 6$
 $f(x) = \frac{-17}{18} (x+3)(x-6)$
 $x^2 - 6x + 3x - 18$

3. odd $\rightarrow \sim$ \rightarrow has to cross x
 even $\rightarrow \cap$ \rightarrow doesn't cross x

6. $\frac{8x+14}{3x-12} \rightarrow \frac{2(4x+7)}{3(x-4)}$

7.

$f(x) \cdot f(t) = -16t^2 + 37t + 114$

a) 114

b)

c)

d)

c. $h(x) = 3x^2 - 38x + 13$
 $\frac{-38 \pm \sqrt{(38)^2 - 4(3)(13)}}{2(3)}$
 $\frac{-38 \pm \sqrt{1444 - 156}}{6}$
 $x = 0.3519$
 $x = 12.315$

4. largest degree

$13x^4 \rightarrow 4$
 $-14x^4 \rightarrow 4$
 $(x^3)(x^4) \rightarrow 7$

$c(0+3)(0-6)$

$c(3)(-6)$

$c(-18) \rightarrow c = \frac{-17}{18}$

10. $(-2, 0) (4, 0)$

vertical: 0

$n(x) \rightarrow$ roots

$d(x) =$ vertical asymptote

$\frac{-37 \pm \sqrt{(37)^2 - 4(-16)(114)}}{2(-16)}$