

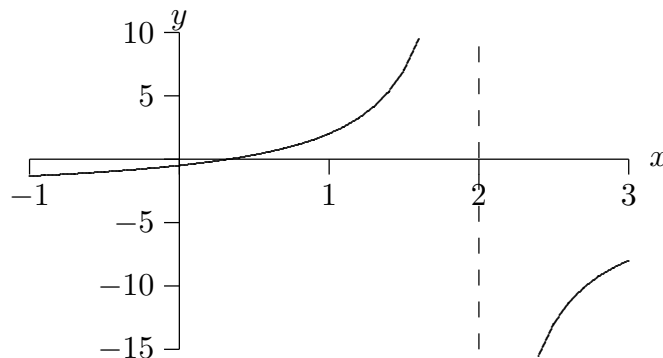
10. (a) $2x - 3$
 (b) $2(x - 3)$
 (c) $\frac{(2x)^3 + 1}{x}$
 (d) take a number, multiply by 3, then subtract 1
 (e) take a number, add 1, cube the result, multiply by 2, then subtract 5
 (f) take a number, subtract 3, divide by 7, then subtract 1

11. (a) $f(0) = 0^2 - 2(0) + 1 = 1$
 (b) $f(1) - 2 = (1^2 - 2 \cdot 1 + 1) - 2 = 0 - 2 = -2$
 (c) $f(f(-1)) = f((-1)^2 - 2(-1) + 1) = f(4) = 4^2 - 2(4) + 1 = 9$

12. The function g is defined whenever $x - 3 > 0$, that is, whenever $x > 3$.
 The domain of g is the interval $(3, \infty)$.

13. (a) $y = 3x - 7$
 (b) $y = 2$
 (c) The line $x - 3y = 5$ has slope $\frac{1}{3}$; a perpendicular line will have slope -3 .
 The line with slope -3 passing through $(0, 3)$ has equation $y = -3x + 3$.

14. (a) The domain of f is the set of all real numbers except 2.
 (b)



- (c) The graph crosses the x -axis at $\frac{1}{3}$. (Set $1 - 3x = 0$. Be sure you can get this *exact* answer, not just $x \approx 0.333333$.)
 (d) When $x = 1.375$ (exactly), then $f(x) = 5$. (You could check this, if desired, by solving the equation $5 = \frac{1-3x}{x-2}$.)

15. (a) $\frac{1+\sqrt{2}}{\sqrt[3]{5}-7} \approx -0.45637$
 (b) 19.72 (this is exact)
 (c) $|1 - 2\sqrt{3}| \approx 2.46410$
 (d) $(2.03 \times 10^{-9})(-4.1 \times 10^7) = -0.08323$ (this is exact)