

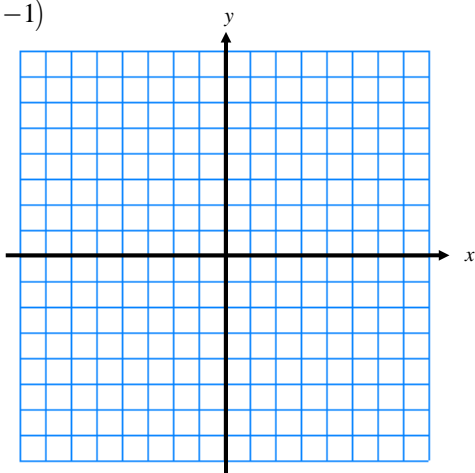
AP Calculus
Parent Function & Transformations Worksheet

All work must be shown in this course for full credit. Unsupported answers may receive NO credit.

1. First graph $f(x) = \log_3 x$. Then graph the following transformations:

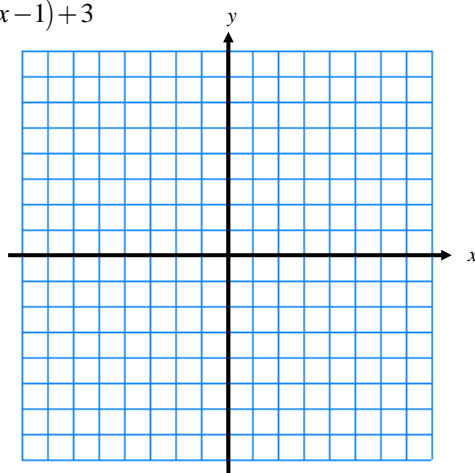
a) $y = 4 - f(x)$

b) $y = -f(x-1)$



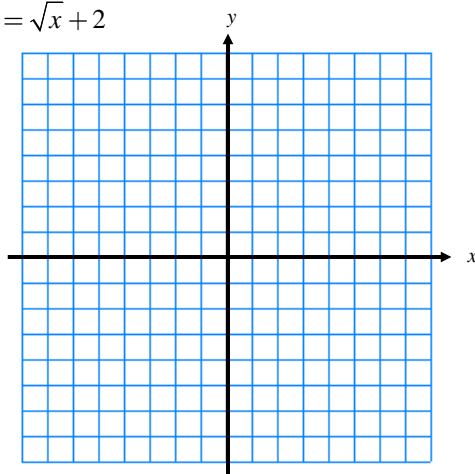
c) $y = \frac{1}{4} f(x+2)$

d) $y = -2f(x-1) + 3$

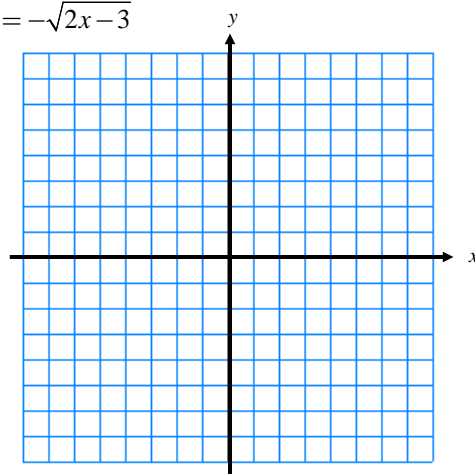


2. For $a - c$, graph $f(x) = \sqrt{x}$ first, and then graph each transformation.

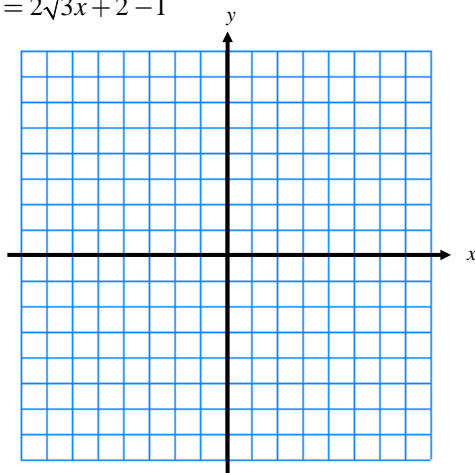
a) $y = \sqrt{x} + 2$



b) $y = -\sqrt{2x-3}$



c) $y = 2\sqrt{3x+2} - 1$



3. Given the function $g(x)$ as shown to the right, describe the transformation, then graph and label the following:
 [Use another sheet of graph paper]

a) $y_1 = g(x) - 1$

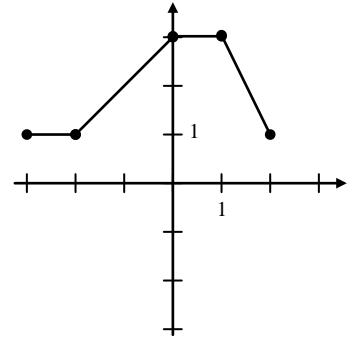
d) $y_4 = g(-x)$

b) $y_2 = g(x-1)$

e) $y_5 = -\frac{1}{2}g(x)$

c) $y_3 = 2g(x)$

f) $y_6 = \frac{1}{2}(g(x+2))$



4. Without using your grapher, state the parent function, describe the transformation, and sketch the following:
 [Use another sheet of graph paper]

a) $y = \log(x-2)$

g) $y = \frac{1}{(x+3)} - 2$

b) $y = 3\sin(x + \frac{\pi}{2})$

h) $y = \frac{1}{(x-1)^2} + 3$

c) $y = -\frac{1}{2}(x+1)^2 - 2$

i) $y = (x-3)^3 - 1$

d) $y = 2^{-x}$

j) $y = 3(x+1) - 2$

e) $y = -\cos(x) + 1$

k) $y = -2\sqrt{3 - \frac{1}{3}x} + 4$

f) $y = \tan(-x)$

5. Complete the following questions from the textbook: page 19: #7, 8, 12, 14, 16, 19