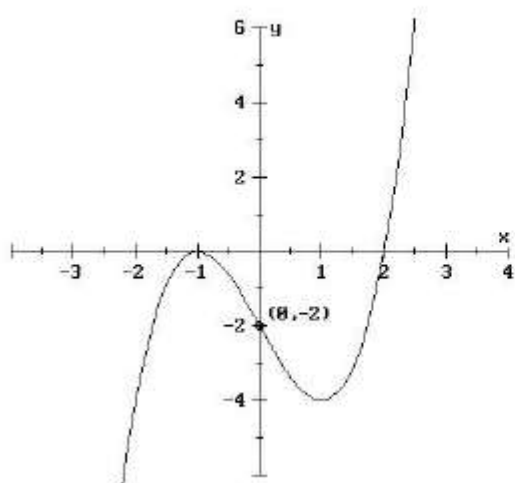


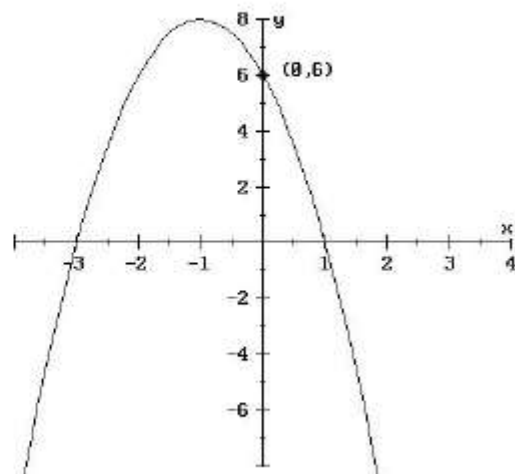
Comp Review WS #12

1. Find an equation for each polynomial function represented below. Leave your answer in factored form.

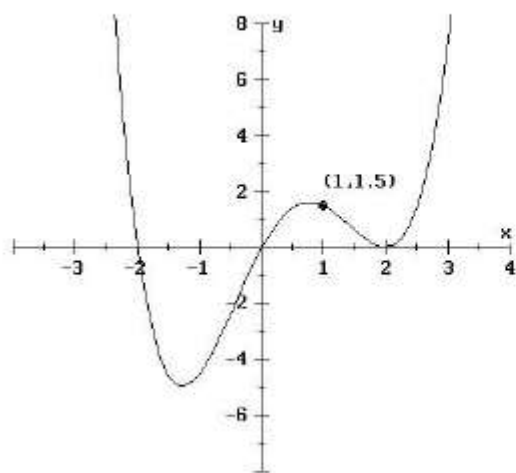
a.



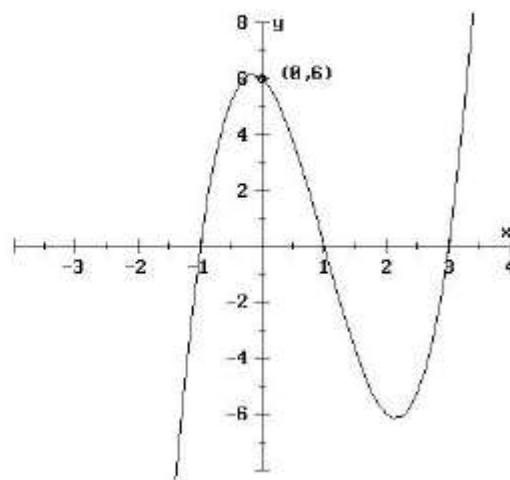
b.



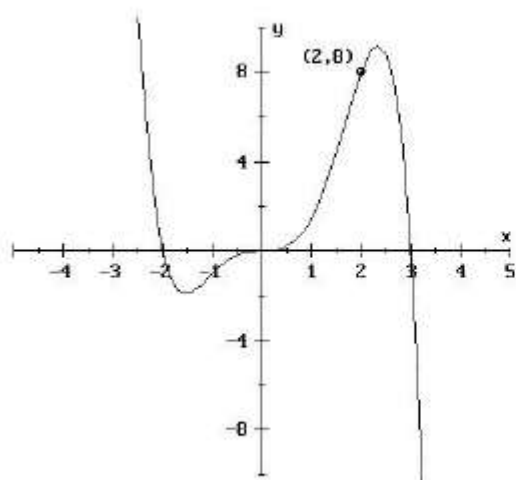
c.



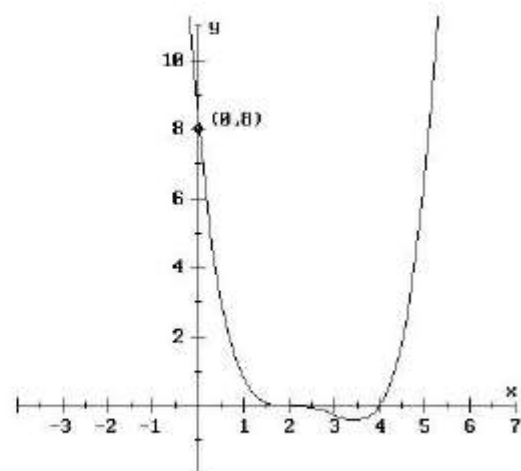
d.



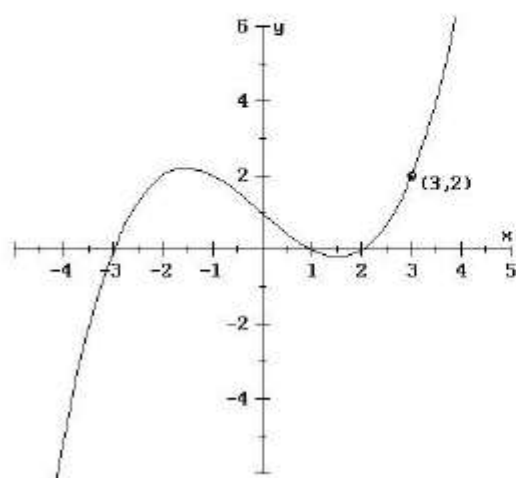
e.



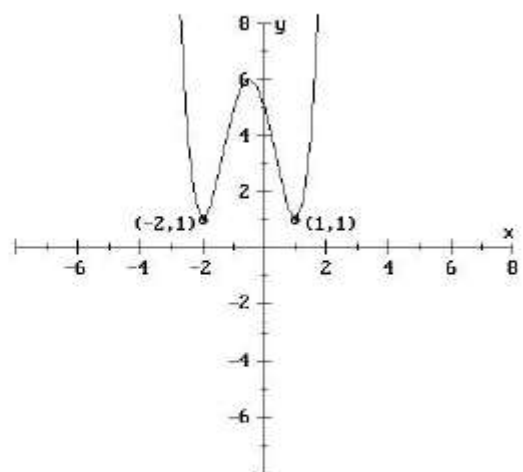
f.



g.



h.



(Hint: What would the equation be if the graph was shifted down 1 unit?)

2. Sketch a graph for each function below, clearly showing any asymptotes, zeros, holes, y -intercept, and the end behavior.

(a) $f(x) = (x - 2)(x + 3)(x - 1)$

(b) $f(t) = t^2(t - 1)(t + 2)$

(c) $g(r) = \frac{r^2 - 9}{r - 4}$

(d) $g(x) = \frac{x^2 + 6x + 9}{x^2 + 2x - 3}$

(e) $h(t) = \frac{t - 8}{t^2 - 64}$

(f) $h(w) = \frac{w^3 + w^2 - 6w}{w^2 + 1}$

3. Given the following information about a rational function, determine its equation.

(a) The zero of the function is $x = 4$, the y -intercept is at -2 , the equations of the asymptotes are $x = 2$ and $y = -1$.

(b) The zero of the function is $x = -1$, the y -intercept is at 2 , the equations of the asymptotes are $x = -2$, $x = 3$ and $y = 0$.

(c) The zero of the function are $x = -1.5$ and $x = 2$, the y -intercept is at 3 , the equations of the asymptotes are $x = -2$, $x = 1$ and $y = 2$.

Comp Review WS 12 Answer Key

Note there are many possible answers

1. (a) $y = (x + 1)^2(x - 2)$

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

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

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

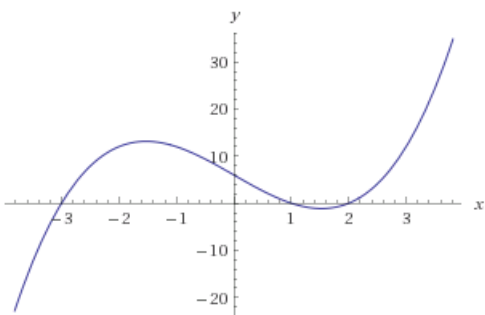
(e) $y = -\frac{1}{4}(x + 2)x^3(x - 3)$

(f) $y = \frac{1}{4}(x - 2)^3(x - 4)$

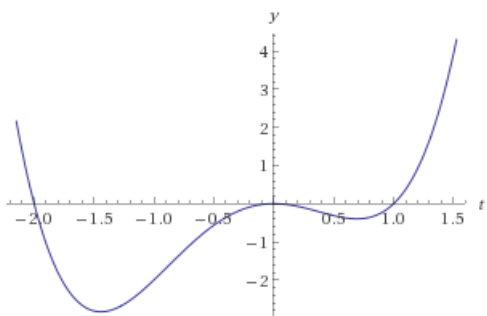
(g) $y = \frac{1}{6}(x + 3)(x - 1)(x - 2)$

(g) $y = (x + 2)^2(x - 1)^2 + 1$

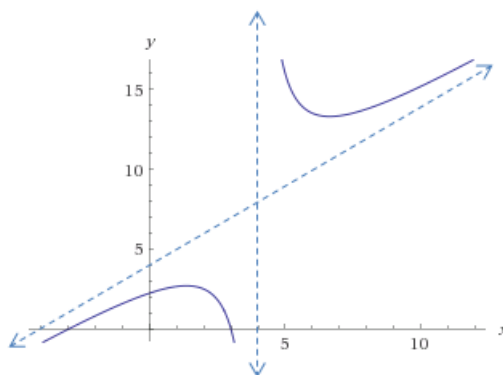
2. (a)



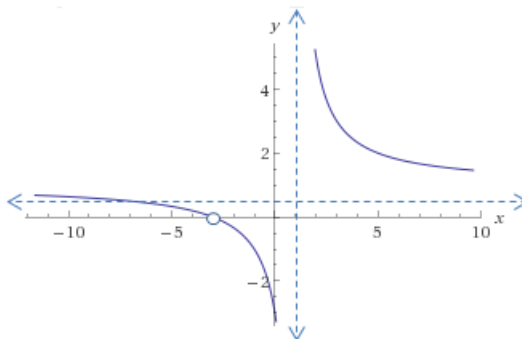
(b)



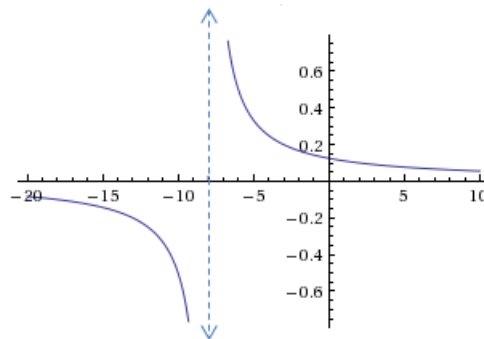
(c)



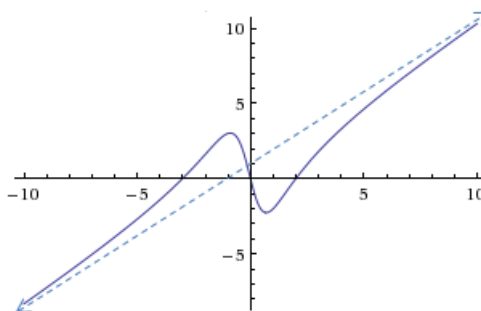
(d)



(e)



(f)



3. (a) $f(x) = \frac{-1(x - 4)}{(x - 2)}$

(b) $f(x) = \frac{-3(x + 1)}{(x + 2)(x - 3)}$

(c) $f(x) = \frac{2(x + 1.5)(x - 2)}{(x + 2)(x - 1)}$