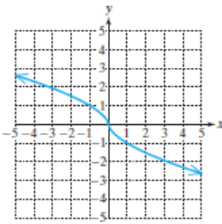
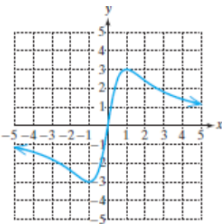


4.1, #15,19,21: Determine whether the following relations are graphs of one-to-one functions.

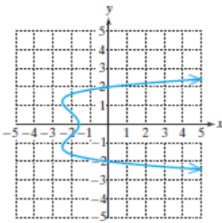
15.



19.



21.



4.1, #25,27,29: Determine whether the following functions are one-to-one.

(a). $g(x) = x^3 + 8$.

(b). $m(x) = x^2 - 4$.

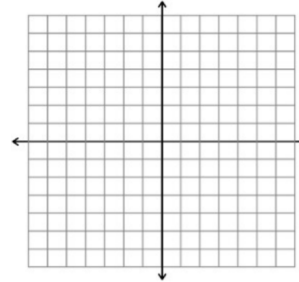
(c). $q(x) = |x + 1|$.

4.1, #33: Determine whether the functions $m(x) = \frac{-2+x}{6}$ and $n(x) = 6x - 2$ are inverses.

4.1, #93: Explain why a strictly increasing function must be one-to-one.

4.1, #56:

(a). Graph $f(x) = \sqrt{x - 2}$.



(b). From the graph of f , is f a one-to-one function?

(c). Write the domain and range of f in interval notation.

(d). Write an equation for $f^{-1}(x)$.

(e). Graph $y = f^{-1}(x)$ in the graph you used for part (a).

(f). Write the domain and range of f^{-1} in interval notation. Explain any restrictions in the domain.

4.2, #13: Which of the following functions are exponential functions?

(a). $f(x) = 4.2^x$; (b). $g(x) = x^{4.2}$; (c). $h(x) = 4.2x$; (d). $k(x) = (\sqrt{4.2})^x$; (e). $m(x) = (-4.2)^x$.

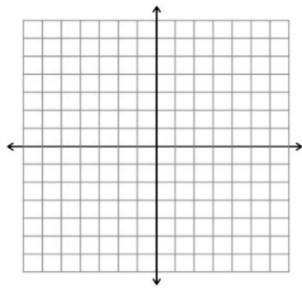
4.1, #45,49,69: Find the inverses of the following functions:

(a). $m(x) = 4x^3 + 2$.

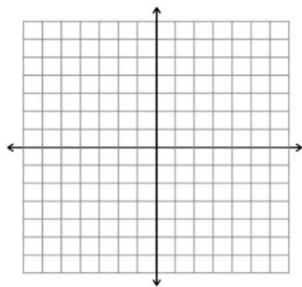
(b). $t(x) = \frac{x-4}{x+2}$.

(c). $q(x) = \sqrt[5]{4x-3} + 1$.

4.2, #17: Graph the function $m(x) = \left(\frac{1}{3}\right)^x$ and give its domain and range.



4.2, #27: Use transformations of the graph $y = 3^x$ to graph the function $p(x) = 3^{x-4} - 1$, give its domain and range, and write the equation of its asymptote.

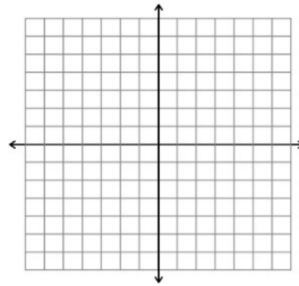


4.2, #57: The atmospheric pressure on an object decreases as altitude increases. If a is the height (in km) above sea level, then the pressure $P(a)$ (in mmHg) is approximated by $P(a) = 760e^{0.13a}$.

(a). Find the atmospheric pressure at sea level.

(b). Determine the atmospheric pressure at 8.848 km (the altitude of Mt. Everest). Round to the nearest whole unit.

4.2, #27: Use transformations of the graph $y = e^x$ to graph the function $h(x) = -e^x - 3$, give its domain and range, and write the equation of its asymptote.



4.2, #49: Bethany needs to borrow \$10,000. She can borrow the money at 5.5% simple interest for 4 years or she can borrow at 5% with interest compounded continuously for 4 years.

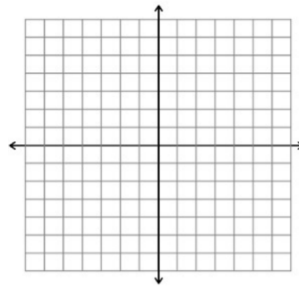
(a). How much total interest would Bethany pay at 5.5% simple interest?

(b). How much total interest would Bethany pay at 5% interest compounded continuously?

(c). Which option results in less total interest?

4.2, #65:

(a). Graph $f(x) = 2^x$. Then, use the graph to determine whether f is a one-to-one function and write the domain and range of f in interval notation.



(b). Graph f^{-1} in the same picture/coordinate system. Then, write the domain and range of f^{-1} in interval notation and use the graph to evaluate $f^{-1}(1)$, $f^{-1}(2)$, and $f^{-1}(4)$.