Precalculus
Homework Lecture 14

1. Express each of the following as a single power.

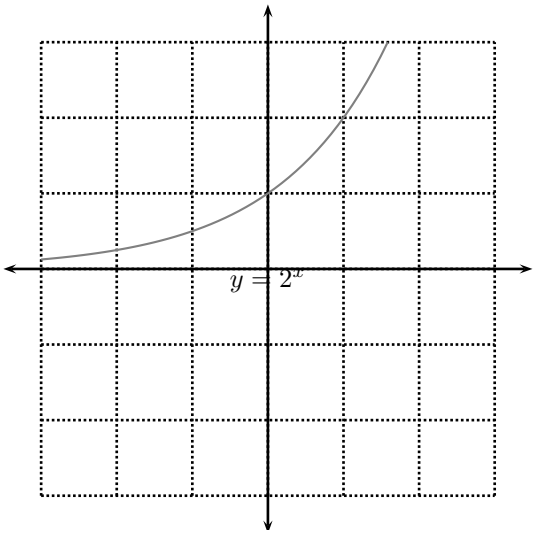
   (a) $\dfrac{2^5 \cdot 2^7}{2\sqrt{2}}$

   (b) $\dfrac{3^2 \cdot 3^{-1}}{3^3 \cdot \sqrt{3^3}}$

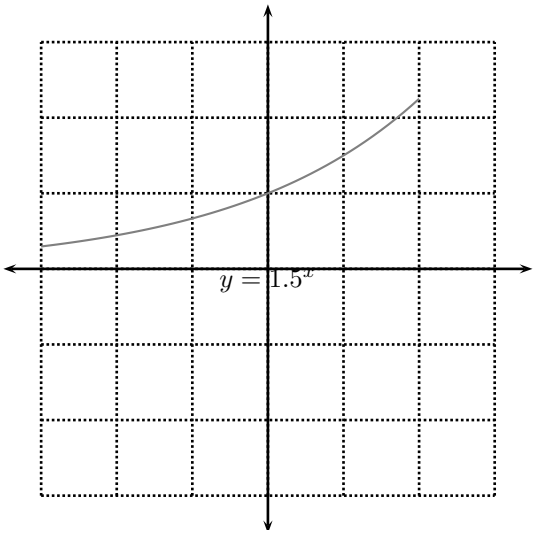
   (c) $\dfrac{\pi^3}{\pi^{-1}\sqrt{\pi^5}}$

2. Sketch by hand approximately the given function. The function is obtained by transforming linearly the graph of a known function. The known function has been sketched for you by computer.

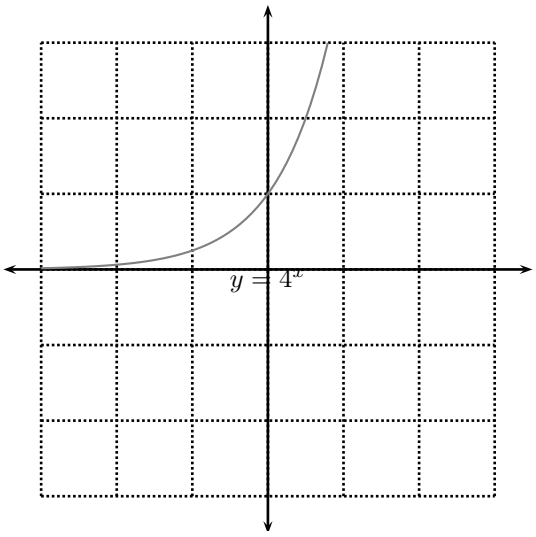
   (a) $f(x) = 2^{x+1} - 1$.



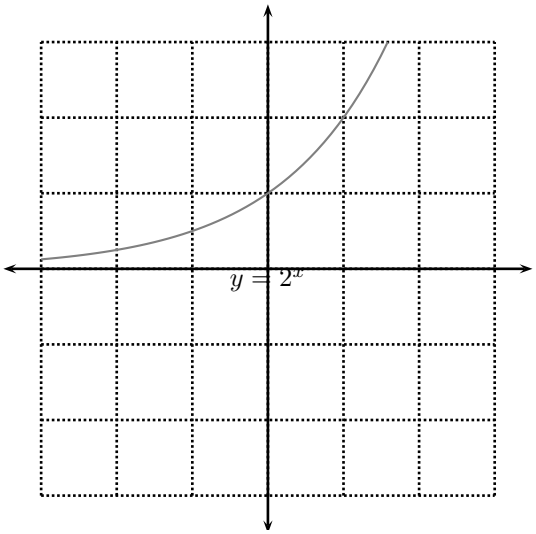
   (b) $f(x) = 1.5^{x-2} + 2$.



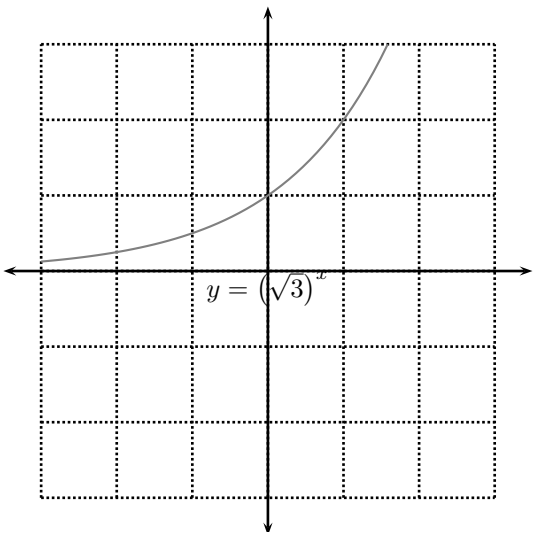
(c) $f(x) = 2^{2x-5}$.



(d) $f(x) = \dfrac{1}{2^{x-1}} + 1$.



(e) $f(x) = \dfrac{1}{3^{\frac{1}{2}x+1}} - 1$.



(a) A sum is held under a yearly compound interest of 1%. Make an approximation by hand (no calculators allowed) by what factor will have the money increased after 200 years. Can you do the computation in your head?

(b) Decide, without using a calculator, which is more profitable: earning a yearly compound interest of 2% for 150 years or earning yearly simple interest of 11% for 150 years?