Chapter 7, Graphing Calculator Activities **Name:**

1. Evaluate.

   a) $27^{1/3}$ b) $\sqrt[5]{32^2}$ c) $\sqrt{\frac{25}{144}}$

   d) $\sqrt[3]{27}$ e) $32^{2/5}$ f) $\left(\frac{512}{729}\right)^{\frac{2}{3}}$

2. Explain two ways you can evaluate $\sqrt[4]{20}^3$ using a calculator.

3. Evaluate. Explain the meaning of the negative sign in each expression.

   a) $\sqrt{-16}$ b) $\sqrt[3]{-125}$ c) $\left(\frac{36}{81}\right)^{-\frac{1}{2}}$

4. Graph each function and find the domain.

   a) $f(x)=\sqrt{x-2}$ b) $g(x)=\sqrt[3]{x+8}$ c) $h(x)=\sqrt[4]{x+1}$

5. Is $x+2=y^2$ an example of y as a function of x? Explain how you would graph $x+2=y^2$ and draw the graph.

6. Solve $\sqrt[3]{x-8}=2x-4$ graphically.

7. Graph $\sqrt{x^2}$.
   a) State the domain.
   b) Can x be a negative number? Explain

8. Consider $\sqrt{x+2}=2x+1$.
   a) Solve numerically.
   b) Solve graphically.
   c) Compare your answers.

9. The hang time of a football (time in the air) is given by the function $T(h)=\frac{\sqrt{h}}{2}$, where h is the maximum height of the ball in feet and T is time in seconds.
   a) Graph $T(h)$.
   b) If the ball is kicked 75 feet into the air, determine the hang time.
   c) If the ball hangs in the air for 4 seconds, how high is the ball kicked?
   d) Determine an appropriate window for this problem.
   Xmin _____ Xmax _____ Ymin _____ Ymax _____