No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

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1. [5 points] Determine whether the integral $I = \displaystyle\int_{-6}^{2} \dfrac{dx}{\sqrt[3]{2-x}}$ is convergent or divergent. Then evaluate the integral if it is convergent and write your answer as a single number.

2. [5 points] Find the hydrostatic force on one end of a cylindrical drum with radius 3 ft if the drum is submerged in water 10 ft deep. The weight density of water is $62.5 = 125/2$ lb/ft^3.

bonus problem [5 points extra] Find the exact length L of the curve $y = \sqrt{3 - x^2}$ when $-\sqrt{3} \leq x \leq 0$. You may use ANY method to find the right answer.