

Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Find an equation for the line passing through the points (2,10) and (5,12).

$$m = \frac{12-10}{5-2} = \frac{2}{3}$$

$$y - y_0 = m(x - x_0)$$

$$y - 10 = \frac{2}{3}(x - 2)$$

Excellent

2. At the surface of the ocean, the water pressure is 15 pounds per square inch. Below the surface, the water pressure increases by 4.34 pounds per square inch for every 10 feet of descent. At what depth, **to the nearest hundredth of a foot**, is the pressure 90 pounds per square inch?¹

$$m = \frac{4.34}{10} = \underline{.434}$$

$$y = \underline{.434x + 15}$$

$$90 = .434x + 15$$

$$75 = .434x$$

$$\underline{172.81 \text{ ft}}$$

Great