

Name _____

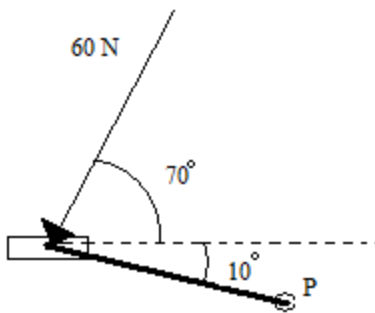
1) Find the equation of the plane passing through (1,2,3), (-1,1,1), and (2,-1,-1).

2) Evaluate $\lim_{t \rightarrow 1} \left\langle \frac{\ln(t)}{t-1}, e^{t^2-1}, \frac{\sin(t-1)}{t-1} \right\rangle$

3) Find $f(t) \times g(t)$ where $f(t) = \langle t - 1, 2t, 3 \rangle$ and $g(t) = \langle t + 1, 4, 5t \rangle$

4) Find the intersection of the planes given by $3x + 2y - z = 6$ and $x + y + 2z = 1$

5) A bicycle pedal is pushed by a foot with a 60-N force as shown. The shaft of the pedal is 18 cm long. Find the magnitude of the torque about P.



6) Find the equation of the plane that is equidistant from the two points (1,-2,3) and (2,3,5)

7) Determine if the lines intersect and if they do find the point of intersection of the two lines:

$$L_1: \frac{x-1}{2} = \frac{y-3}{2} = \frac{z-2}{-1} \text{ and } L_2: \frac{x-2}{1} = \frac{y-6}{-1} = \frac{z+2}{3}$$

8) Find the Maclaurin series for the $\sin(x)$.