

Inclined Plane Vector Practice Worksheet

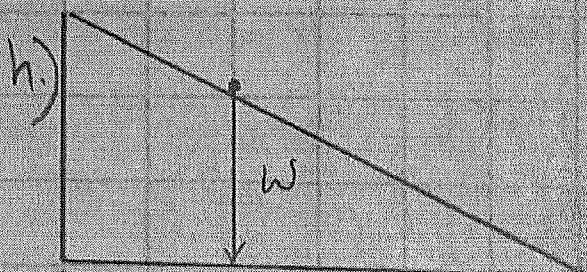
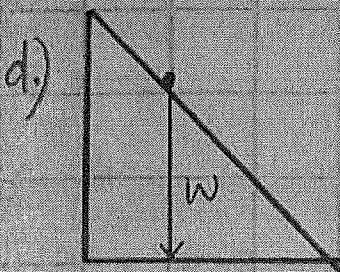
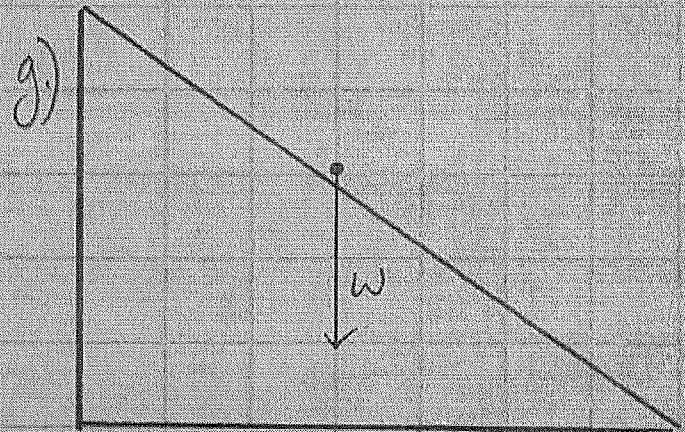
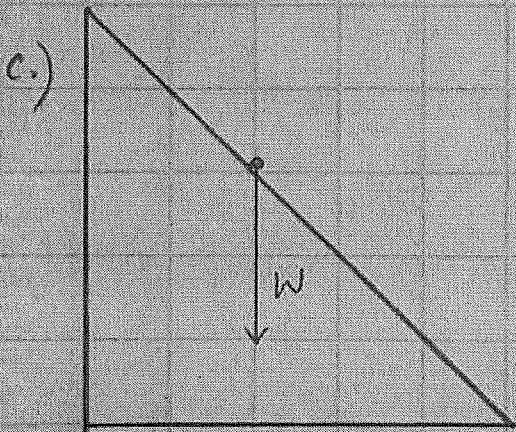
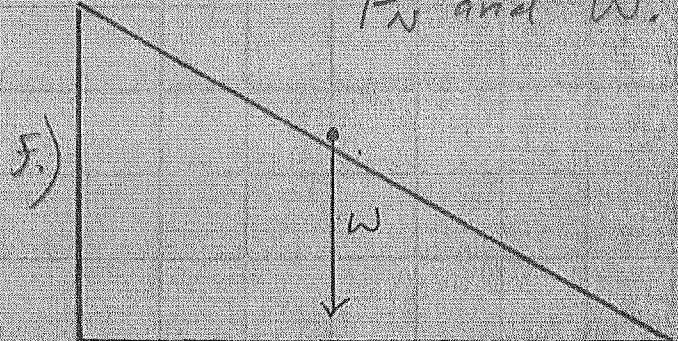
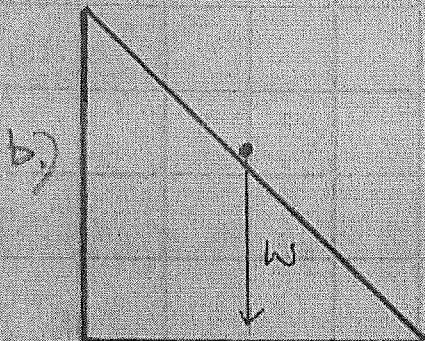
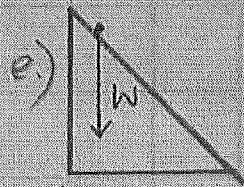
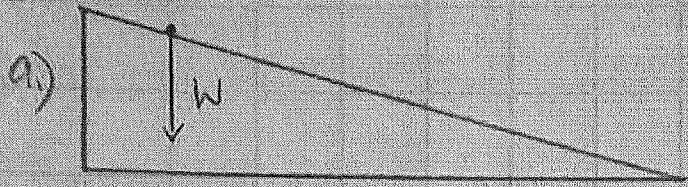
1. Draw the W_{\parallel} and W_{\perp} component vectors.

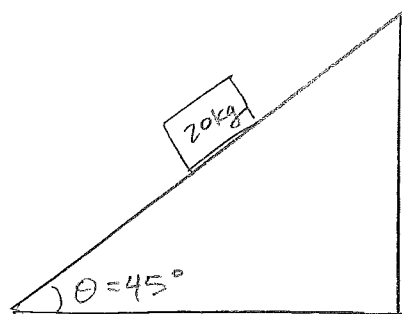
2. Draw the normal force vector.

LABEL EACH FORCE!

3. Draw the resultant of F_N and W .

4. Draw the equilibrant of F_N and W .





$$\theta = 45^\circ$$

$$g = -10 \text{ m/s}^2$$

$$\mu_k = \mu_s = .1$$

1. Draw the force diagram for the 20kg on the picture above.
 - a.) Assume no friction
 - b.) Now assume there is friction. Draw the friction vector.
2. Calculate force gravity. Weight = $F_g = mg$
3. Determine W_\perp and $W_{||}$. Use sine and cosine.
4. Assuming no friction, calculate acceleration: $a = \frac{\sum F}{m}$
5. If $\mu_k = \mu_s = .1$ calculate Force Friction.

$$F_f = \mu_k F_N =$$
6. Calculate the new acceleration with friction.

$$a = \frac{\sum F}{m} =$$
7. What must friction become to prevent the block from sliding? _____