An object is accelerating downward. Which of the following must be true?

A. The object is moving directly downward.

B. If the object's motion is instantaneously horizontal, it can't continue to be so.

C. The object cannot be moving in a straight line.

D. The object cannot be moving upward.

- An object is moving initially in the +*x* direction. Which of the following accelerations, all acting for the same time interval, will cause the greatest change in its speed?

A. $10\hat{j}\ \text{m/s}^2$

B. $2\hat{i} - 8\hat{j}\ \text{m/s}^2$

C. $10\hat{i}\ \text{m/s}^2$

D. $10\hat{i} + 5\hat{j}\ \text{m/s}^2$

An object is on an incline, and the earth is pulling it with gravitational force $\vec{\mathbf{W}}$ on the object. Which of the following is the y-component of the force?

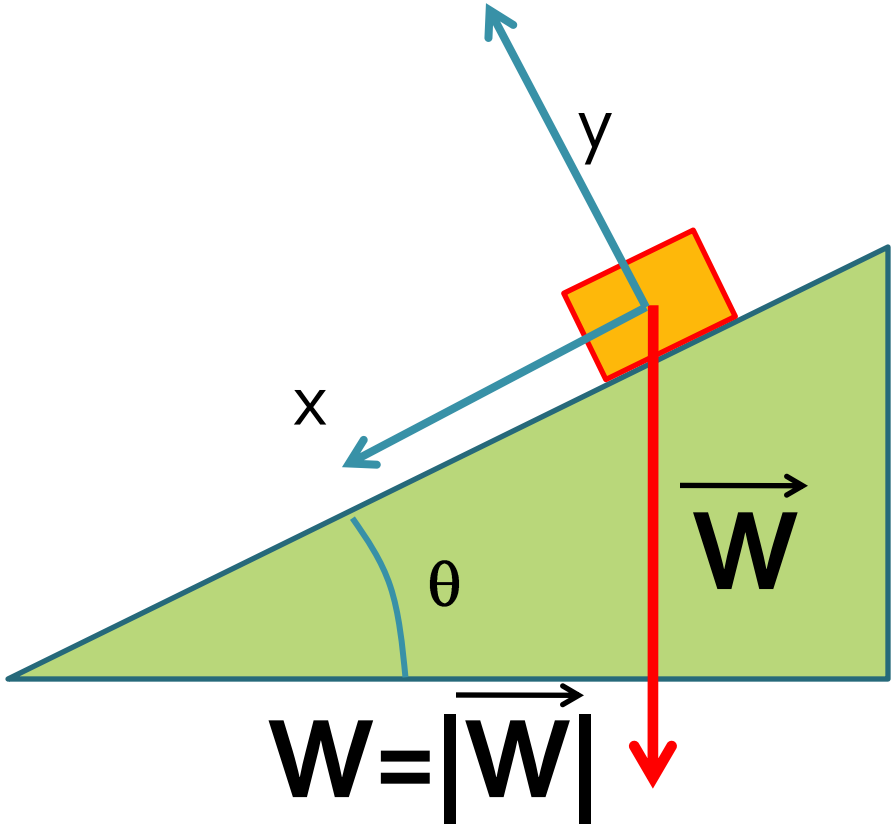
A. W sin θ

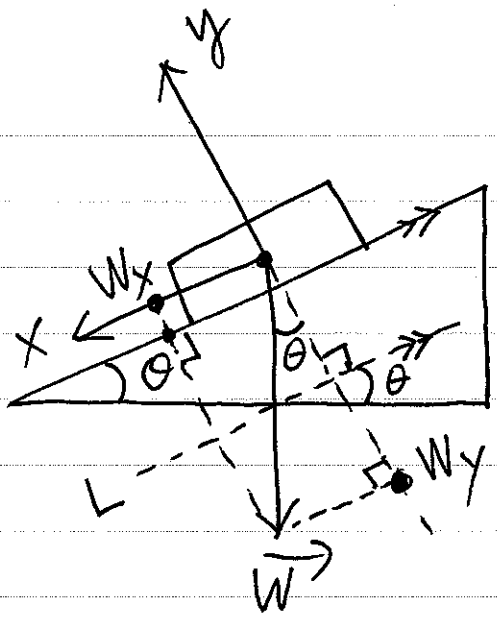
B. W cos θ

C. -W sin θ

D. -W cos θ

E. W / cos θ



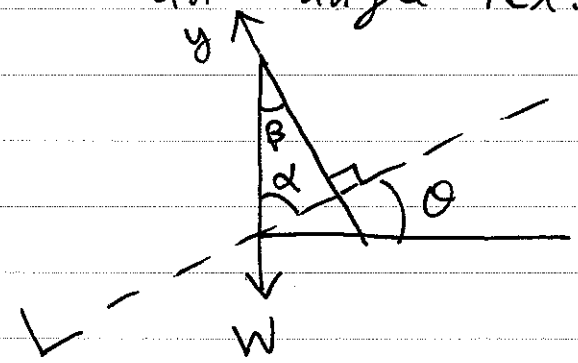


$W_y = ?$

$W \equiv |\vec{W}|$

Ans : $-W\cos\theta$

Why? : With the aid-line L // to the incline, it is straightforward to figure out that $\vec{W}$ makes an angle rel. to the y axis.



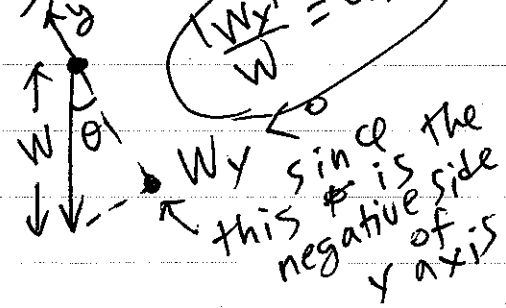
$\alpha+\beta = 90^\circ$

$\alpha+\theta = 90^\circ$

$\therefore \beta = \theta$

From the perpendicular lines from the tip of $\vec{W}$ vector to x axis and y axis, $W_x > 0$, $W_y < 0$

$\therefore W_y = -W\cos\theta$

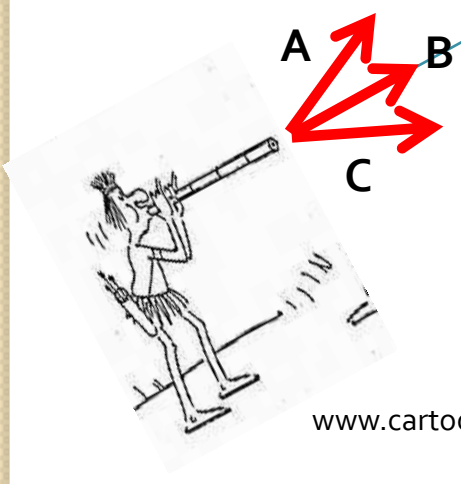


Consider "Hunter and Monkey."

The "Evil Monkey" is high up in the tree, and the monkey starts to fall from the tree just as the dart gun is fired.

How should the hunter aim the dart gun?

A. A
B. B
C. C
D. Depends on the speed of the dart



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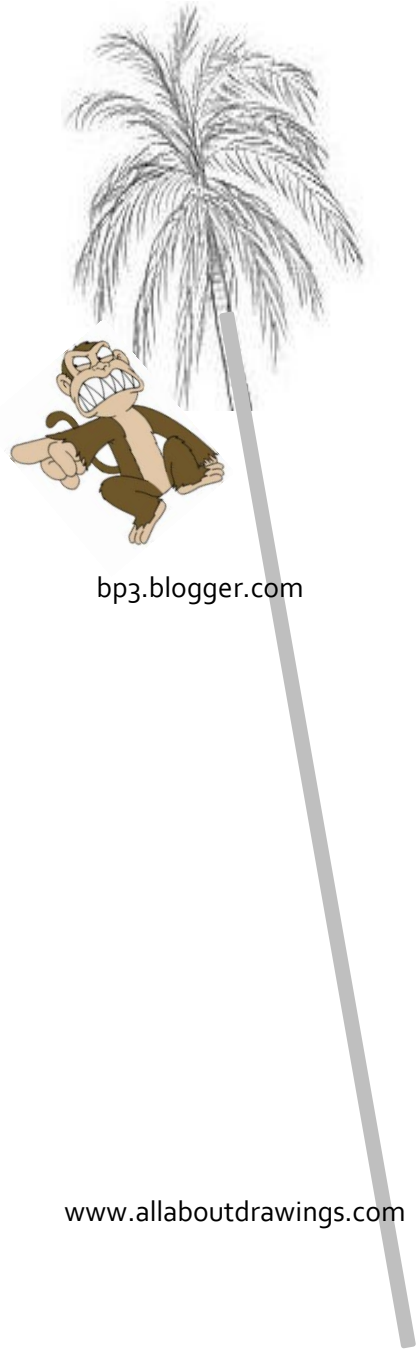

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- Thanks for participating in Clicker Quizzes.
- All scores will be reset as of now (**all of you get perfect scores for quizzes so far**, whether or not you participated).
- **Graded Clicker Quizzes starts on Monday**.
- Please **Read** lecture note or textbook **Before** class!!!