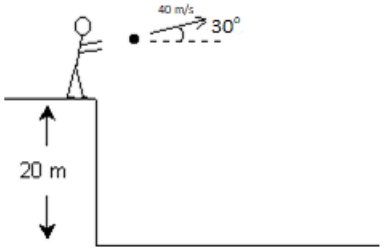
AP Physics 1 Name: _____

Unit 1 2D Motion Quiz Class Period: _____

1. Josh stands on the top of 20 m cliff as shown. In a fit of pure rage, he throws a calculator off the cliff at a speed of 40 m/s at angle of 30° above the horizontal.



a) Find the initial components of the calculator's velocity (horizontal and vertical).

b) Calculate the horizontal distance the calculator travels before hitting the ground below.

c) Suppose the angle with which the calculator was thrown was increased. How would its time in the air compare to when the angle is 30°? Justify your answer.

d) Calculate the angle the calculator's trajectory makes with the ground when it strikes.

e) Graph the horizontal and velocity of the calculator as it is in the air. Label any relative maxes or mins.