

$$V_f = V_i + at$$

$$V_f^2 = V_i^2 + 2a \Delta x$$

$$\Delta x = \frac{1}{2} (V_i + V_f)t$$

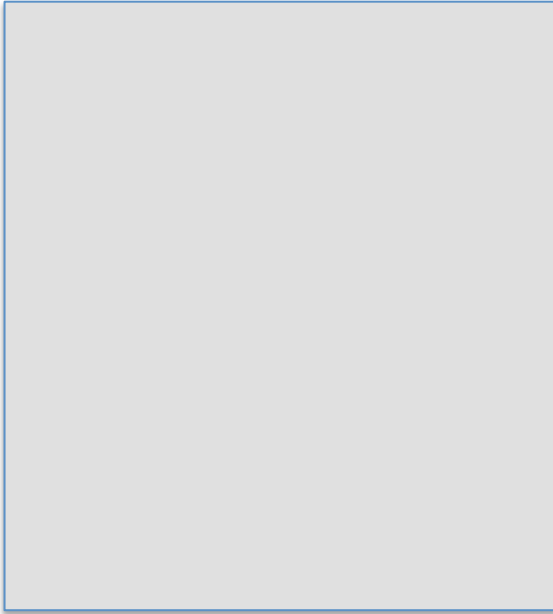
$$\Delta x = V_i t + \frac{1}{2} a t^2$$

## Horizontally Launched Practice Problems

(Video Driven)

1. Armand kicks a soccer ball horizontally with an initial velocity of 5m/s .  
If the cliff is 10m tall, how far does the ball travel horizontally?

**Draw a picture of the situation**



**Fill in the "T" chart**

	X	Y
$V_i$		
$V_f$		
a		
d		
t		

$$V_f = V_i + at$$

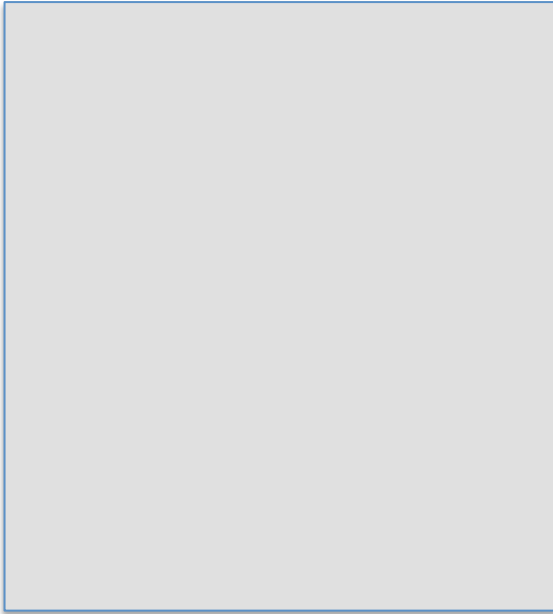
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$$\Delta x = \frac{1}{2} (V_i + V_f)t$$

$$\Delta x = V_i t + \frac{1}{2} a t^2$$

2. Madison kicks the ball off of a 20m tall cliff and then travels 7m horizontally. What was the initial horizontal velocity?

**Draw a picture of the situation**



**Fill in the "T" chart**

	X	Y
$V_i$		
$V_f$		
a		
d		
t		

$$V_f = V_i + at$$

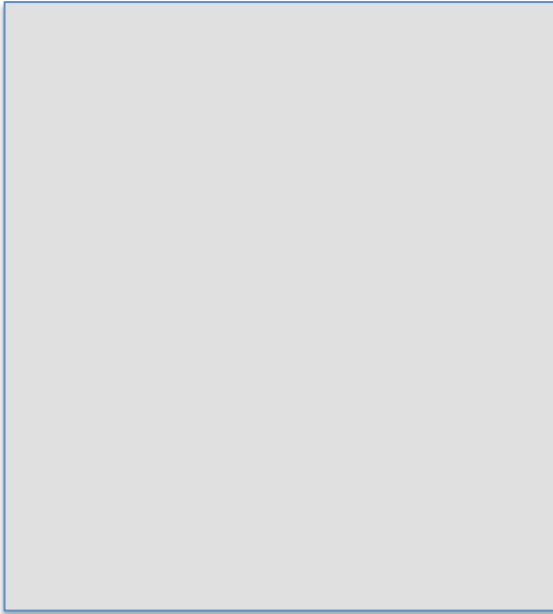
$$V_f^2 = V_i^2 + 2a \Delta x$$

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3. JT kicks the ball with an initial horizontal velocity of 8m/s and it travels for 12m horizontally before hitting the ground. How tall is the cliff?

**Draw a picture of the situation**



**Fill in the "T" chart**

	X	Y
$V_i$		
$V_f$		
a		
d		
t		