

P 34

MC 14, 15

Concept 26

Problem 69, 71, 74

Read 90, 91

Toss Balls Cliff Tutorial

(11 pts)

- Multiple Choice

14) Ball 1 drop Ball 2 throw down
NOT correct

- NOT True →
- a) 2nd ball less time ✓
 - b) 1st ball slower v_f ✓
 - c) 2nd ball larger a
 - d) Same accel ✓

15) Ball 1 throw up Ball 2 throw up twice v_0
Choose correct

- TRUE →
- a) Twice as far travel
 - b) Twice accel X
 - c) Twice the time
 - d) All correct X

- Concept

26) friend says throw up top $v=0$ $a=0$

Friend correct that $v=0$ b/c stops to change direction

friend not correct $a=0$ b/c gravity will still act on it

- Problems

69) $y = 5\text{ m}$
 a) $v_0 = ?$
 $a = -9.81\text{ m/s}^2$
 $v = 0\text{ m/s}$

$$v_p = v_f - at$$

$$= -v + 9.81\text{ m/s}^2 t$$

$$v_f^2 = v_0^2 + 2ad$$

$$v_0 = \sqrt{-2ad}$$

$$= \sqrt{-2(-9.81\text{ m/s}^2)(5.0\text{ m})}$$

$$= 9.9\text{ m/s}$$

b) $t_{\text{tot}} = ?$

$$t = \frac{v - v_0}{a} = \frac{-9.9\text{ m/s} - 9.9\text{ m/s}}{-9.81\text{ m/s}^2} = 2.0\text{ s}$$

(2)

71) $v_0 = 0\text{ m/s}$
 $a = -9.81\text{ m/s}^2$
 $y = 12.0\text{ cm} = .120\text{ m}$
 $t = ?$

$$t = \sqrt{\frac{2d}{a}}$$

$$= \sqrt{\frac{2(.120\text{ m})}{-9.81\text{ m/s}^2}}$$

~~0.156 s~~ .156 s

(1)

74) $v_0 = 7.0\text{ m/s}$
 $y = 24\text{ m}$
 $v_f = ?$
 $a = -9.81\text{ m/s}^2$

$$v_f^2 = v_0^2 + 2ay$$

$$v_f = \sqrt{v_0^2 + 2ay}$$

$$= \sqrt{(7.0\text{ m/s})^2 + 2(-9.81\text{ m/s}^2)(24\text{ m})}$$

$$= 23\text{ m/s}$$

y must be -

(1)

- Reading Passage

90) Why not detect x-rays? on Earth?

a)

b) air absorbs x-rays before detectors

91) $a = 300 \text{ m/s}^2$

$t = 8 \text{ s}$

$v_f = ?$

$$v = v_0 + at$$

$$= (300 \text{ m/s}^2)(8 \text{ s})$$

$$= 2400 \text{ m/s}$$

a)

- Toss Balls off Cliff

Online Tutorial

Ball 1 throw up v_0

Ball 2 throw down v_0

a) acceleration once released?

$$a = g$$

b)

b) greater accel?

Same accel

d) greater v_0 during first 1s?

c) greater v_0 ?

Same v_0

Ball 2
(g work w/ v. to \uparrow)

e) v_f total?
Same