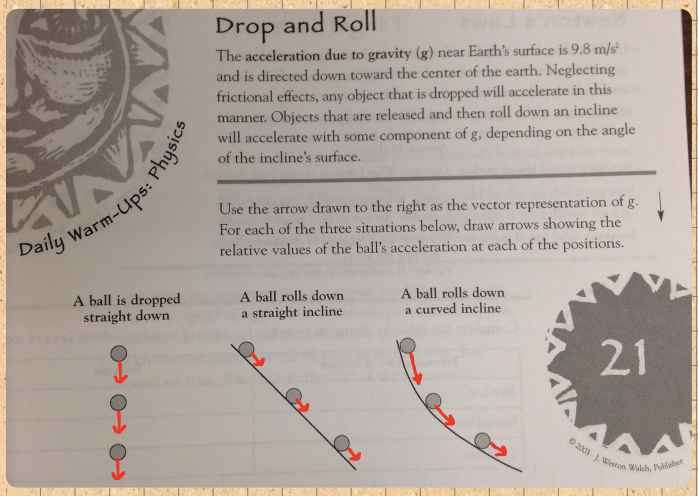
Warm-up:



Daily Warm-Ups: Physics

Drop and Roll

The **acceleration due to gravity** (g) near Earth's surface is 9.8 m/s² and is directed down toward the center of the earth. Neglecting frictional effects, any object that is dropped will accelerate in this manner. Objects that are released and then roll down an incline will accelerate with some component of g, depending on the angle of the incline's surface.

Use the arrow drawn to the right as the vector representation of g. For each of the three situations below, draw arrows showing the relative values of the ball's acceleration at each of the positions.

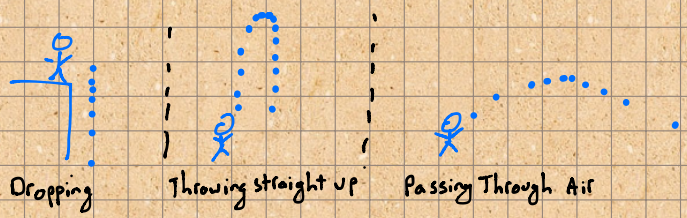
A ball is dropped straight down

A ball rolls down a straight incline

A ball rolls down a curved incline

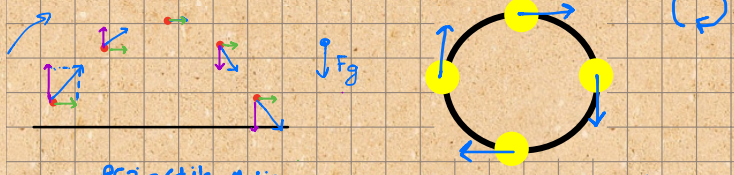
21

- Projectile Motion: when an object is only acted on by gravity in mid-air
  - ↳ ignore air resistance!



Dropping Throwing straight up Passing Through Air

- Uniform Rotational Motion: traveling in a circle @ constant speed
  - ↳ is velocity constant? No
  - ↳ is acceleration constant? No
  - } Changing direction

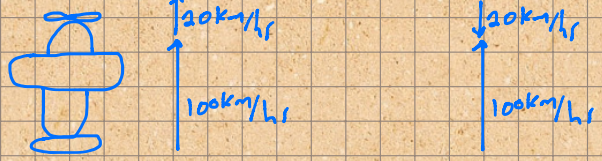


- Projectile Motion

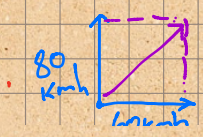
- Uniform Rotational Motion

- Vector Components:
  - ↳ calculate the resultant vector [ie. velocity magnitude]

1)



2) Cross wind



3) 

x : 20 Km/hr

y : 15 Km/hr

Total : ?