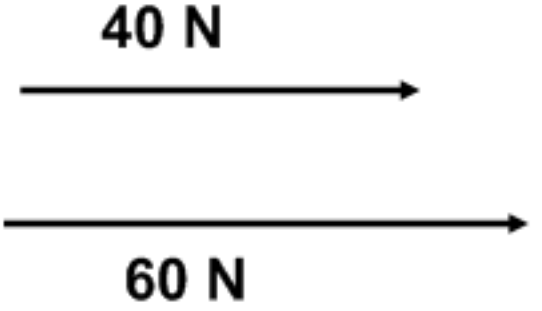
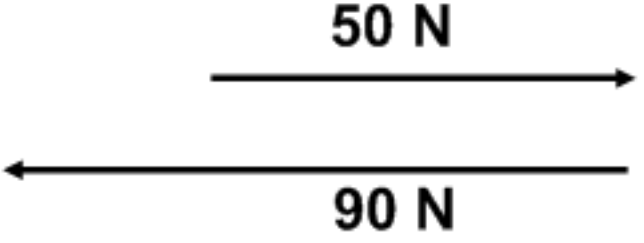
Finding Net Force:

If forces going the same direction, ...



= 100 N

If forces are going opposite directions, ...



= 40 N Left

What force is required to accelerate a 25 kg object at 3.5 m/s/s?

$F = ma$

$F = 25(3.5)$

$F = 87.5\ N$

$F: ?$

$m: 25\ kg$

$a: 3.5\ m/s^2$

A force of 280 N is applied to a 20 kg object. Find the acceleration of the object.

$F = 280\ N$

$m = 20\ kg$

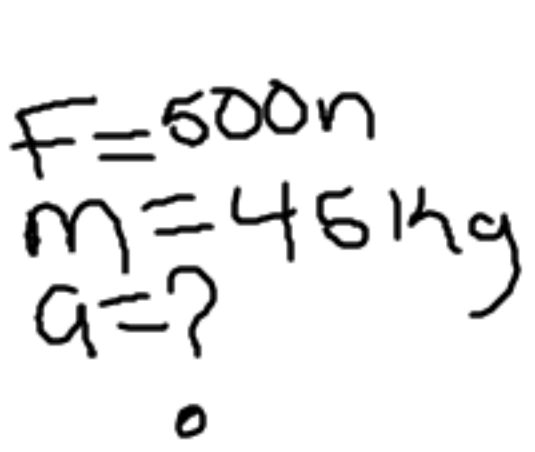
$a = ?$

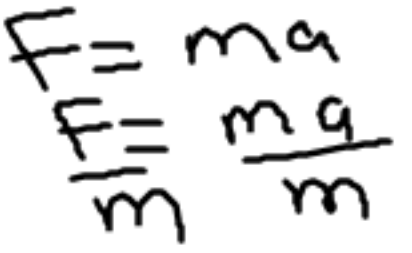
$$\frac{F}{m} = \frac{ma}{m}$$

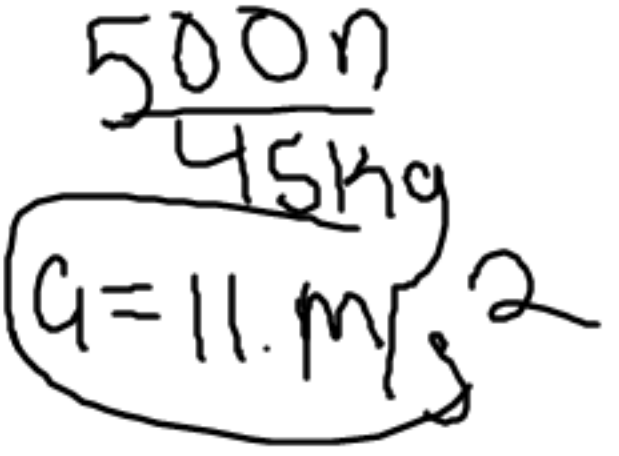
$$\frac{F}{m} = a$$

$$\frac{280}{20} = 14\ m/s^2$$

A force of 500 N is applied to a 45 kg object. What is the rate of acceleration of the object?







A car has a mass of 2400 kg. How much does the car weigh?

$F_g = ?$

$m = 2400\,kg$

$g = 9.80$

$F_g = 2400 \cdot 9.8$

$F_g = 23520\,N$

Determine the mass of a 3000 N boulder.

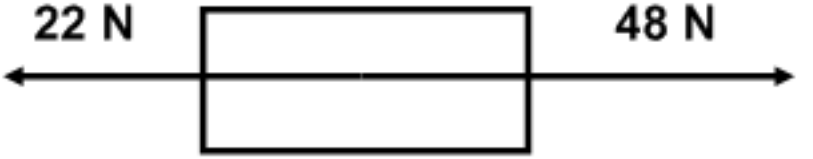
$m = ?$

$F_g = 3000$

$g = 9.80$ $\quad m = 306\ kg$

$$\frac{F_g}{g} = \frac{m \times g}{g}$$

Find the unknown:



m = 13 kg

a = ?

$F = 26$

$m = 13\ kg$

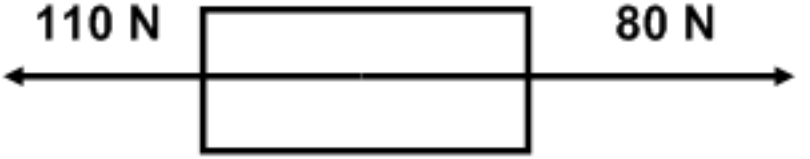
$a = ?$

$a = \frac{F}{m}$

$a = \frac{26}{13}$

$a = 2\ m/s^2 \rightarrow$

Find the unknown:



m = 5 kg

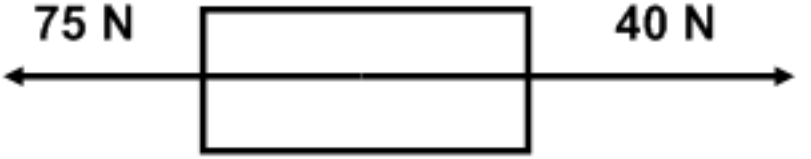
$F = 30\,N$ a = ?

$m = 5\,kg$ $a = \frac{F}{m}$

$a = ?$ $\frac{30}{5} = 6\,m/s^2$ left

$\frac{F}{m} = \frac{ma}{m}$

Find the unknown:



m = ?

a = 5 m/s/s Left

35

$m = ?$

$a = 5$

35

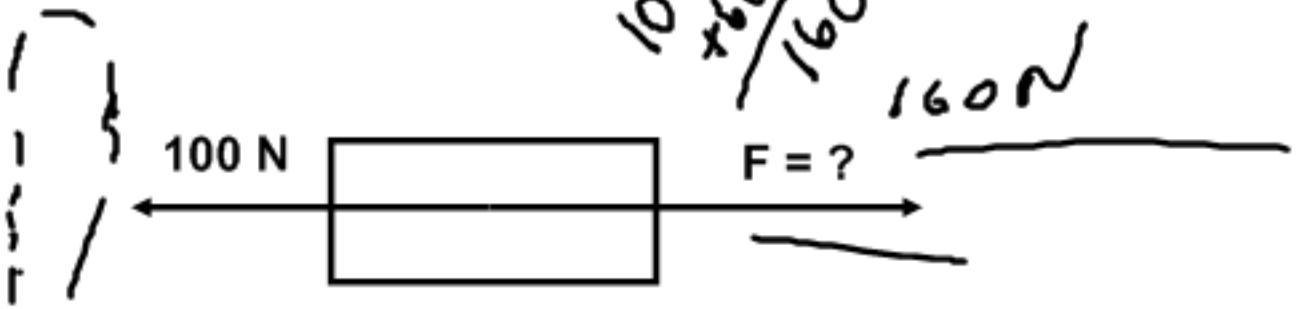
5

$\frac{F}{a} = m$

$a = 7\ m/s^2$

kg

Find the unknown:



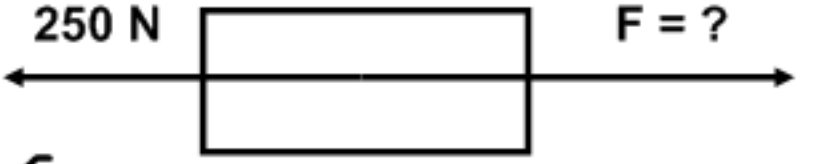
100 + 60 / 160

160 N

F = MA

20 3 = 60 N

Find the unknown:



205N

250
-205
45 N

m = 15 kg

a = 3 m/s/s left

$F = ma$

$a = \frac{F}{m} = \frac{45}{15}$

$a = 3\ m/s^2$

$F = ma$

$F = 15(3) = 45$

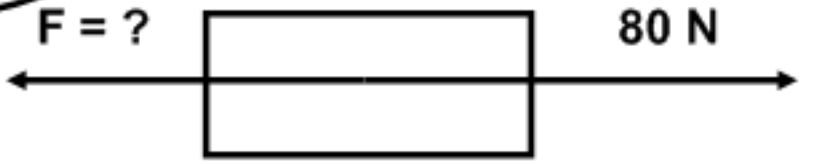
250
- 45
205

Find the unknown:

30 N
10

110 N

$3\frac{m}{s^2}$ L



F

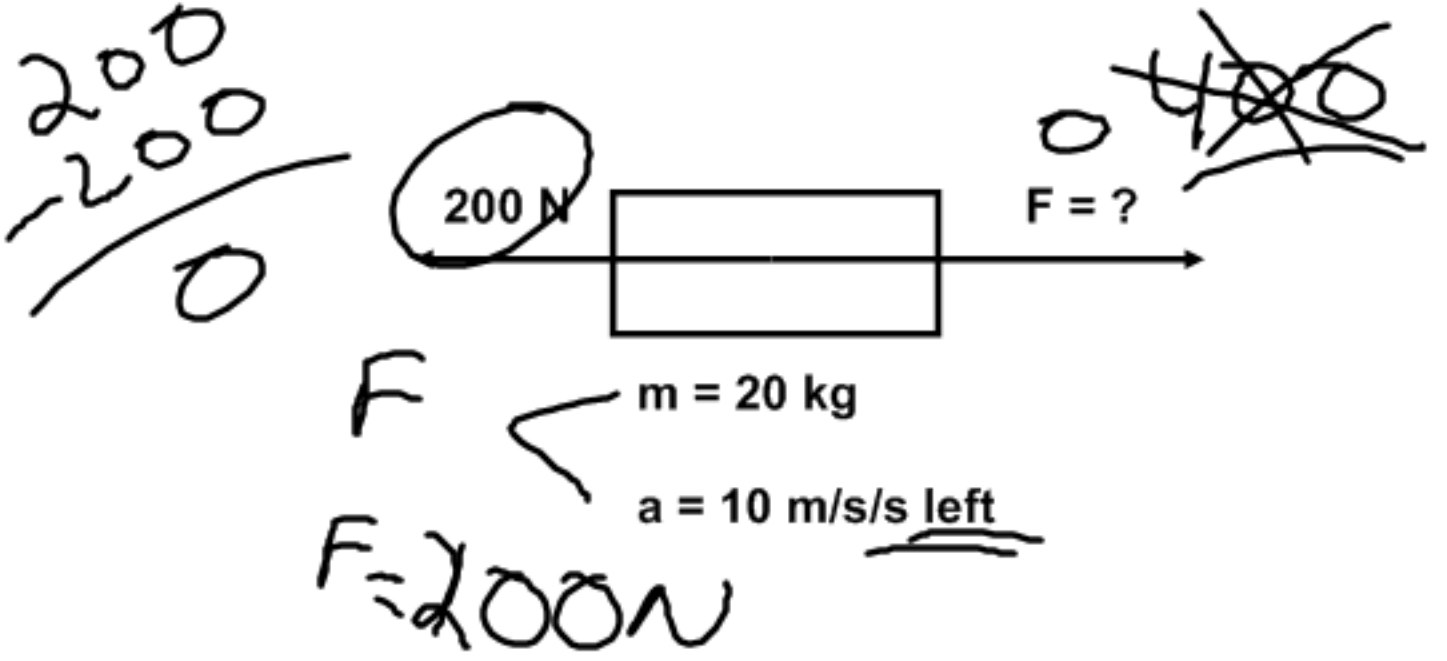
m = 10 kg

a = 3 m/s/s left

80
+30
110

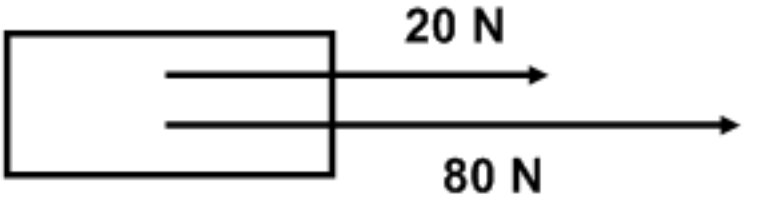
F = 30 N

Find the unknown:



Find the unknown:

$F = 100\ N$



m = 20 kg

a = ?

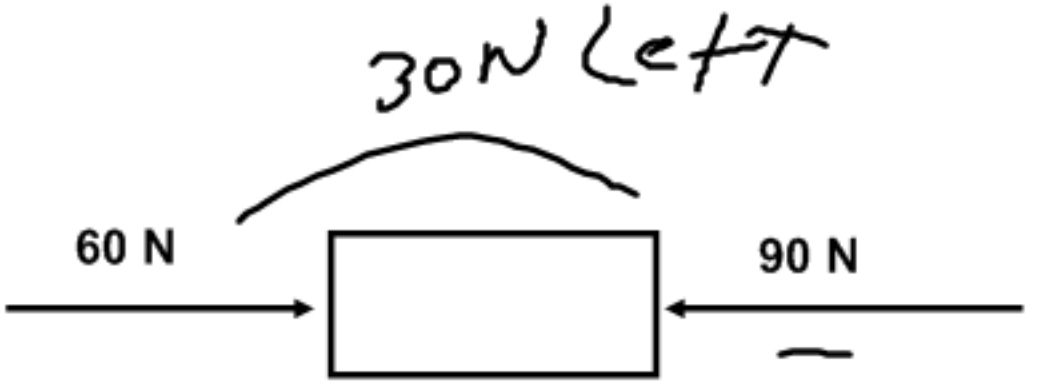
$F = ma$

$a = \frac{F}{m}$

$= \frac{100\ N}{20\ kg}$

$a = 5\ m/s^2$ R

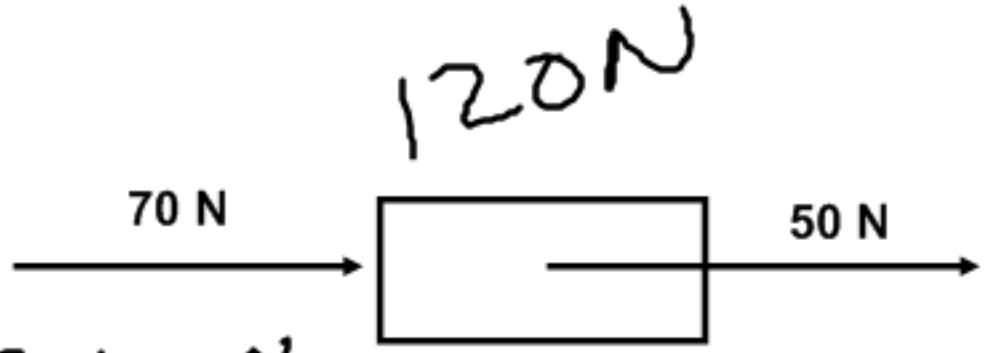
Find the unknown:



$F = ma$

$a = \frac{F}{m} = \frac{30}{10} = 3\ m/s^2$ Left

Find the unknown:

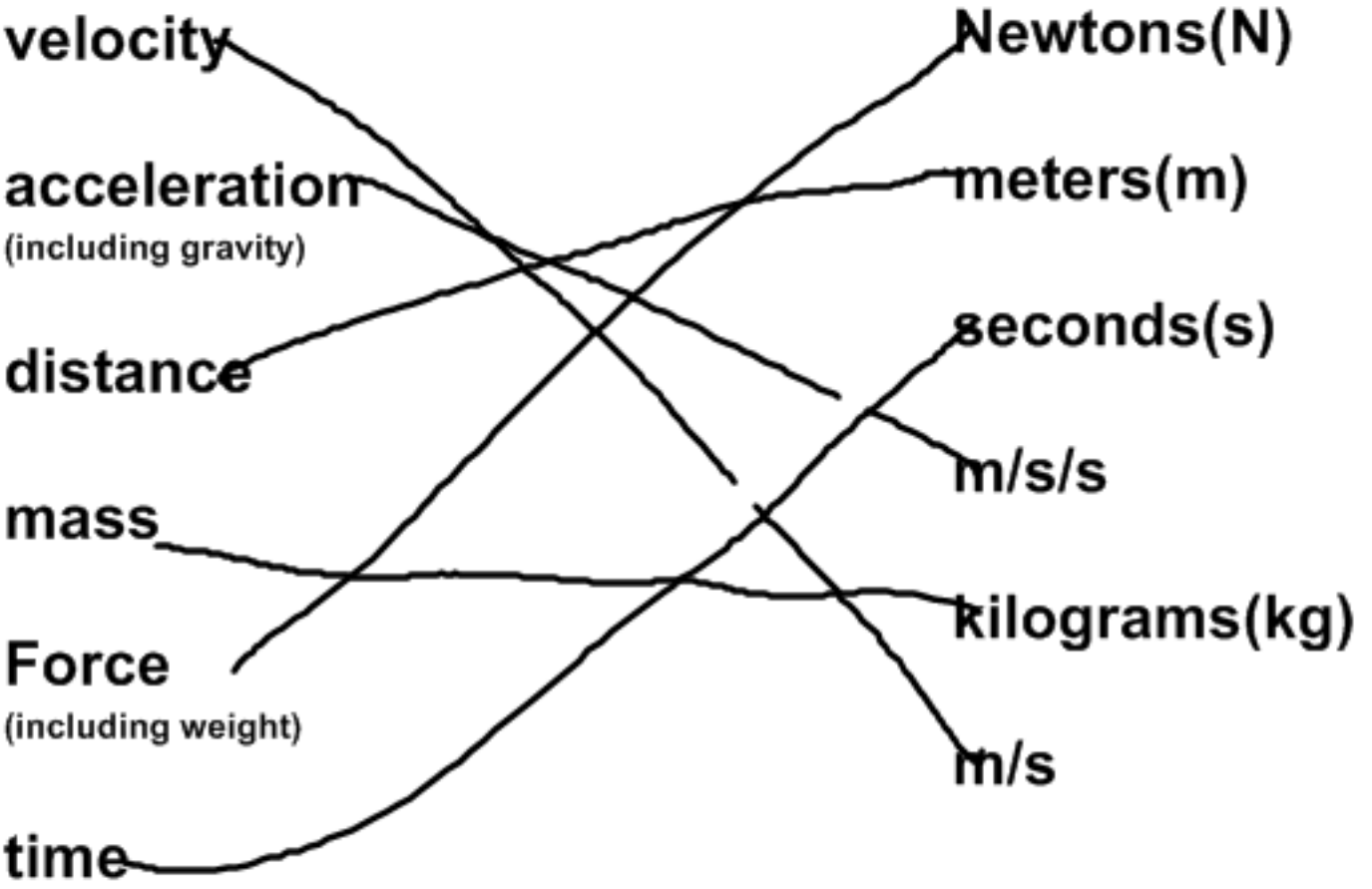


F = 120 N
m = 40 kg
a = ?

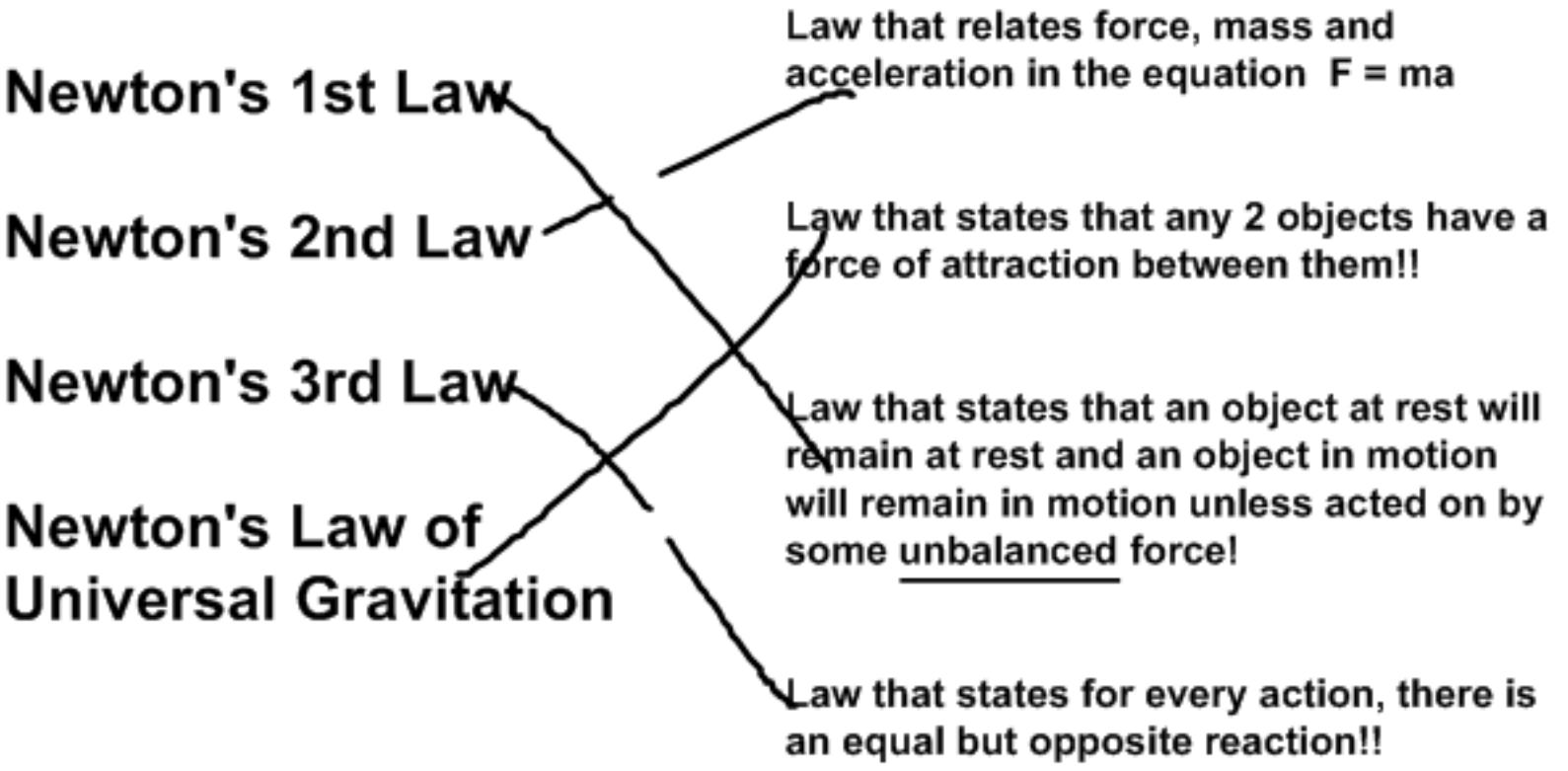
$$\frac{F}{m} = \frac{ma}{m} = \frac{F}{m} = \frac{120}{40}$$

$a = 3\ m/s^2 \uparrow$

Match the following:

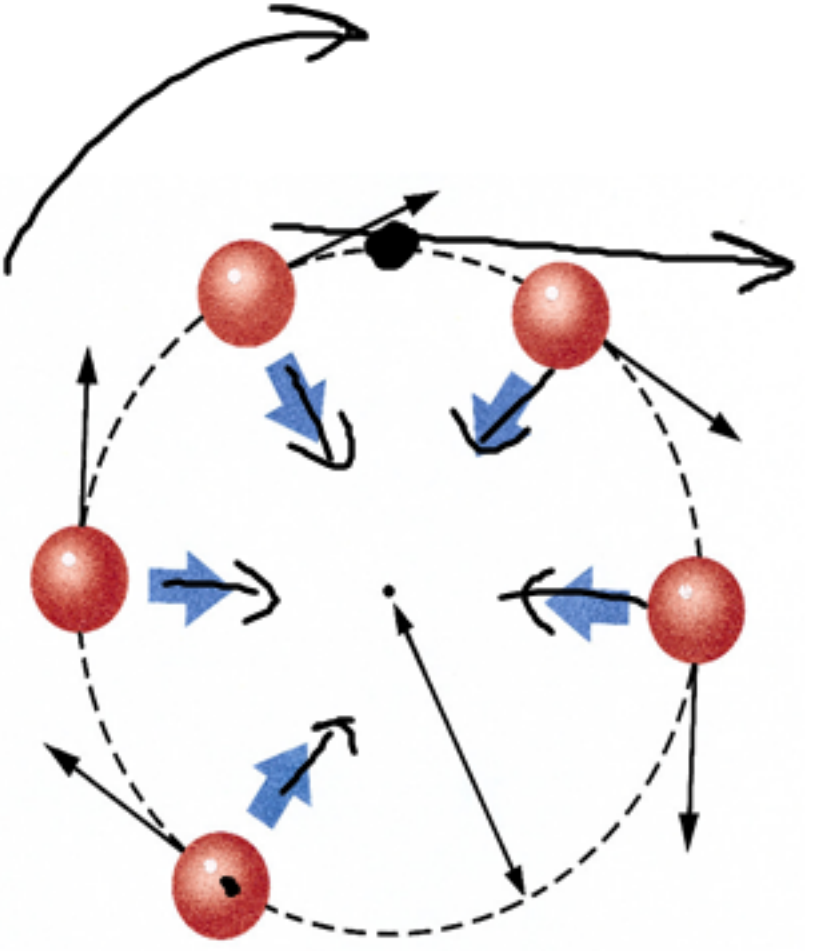


Match the following:



This man is twirling a rubber stopper at a constant speed in a horizontal path around his head. Is the velocity constant? Is the object accelerating? What happens when he lets go?

http://www.practicalphysics.org/ImageLibrary/jpeg400/1083.jpg



http://www.dkimages.com/discover/previews/831/20114114.JPG