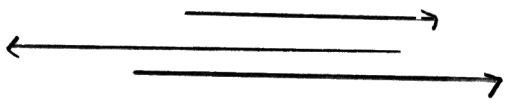
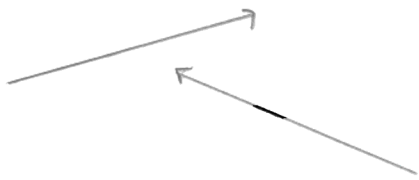
Questions 1_2_2

1. Distinguish between collinear and non-collinear vectors. Draw an example of each type.

Collinear Vectors
- vectors that exist in the same dimension



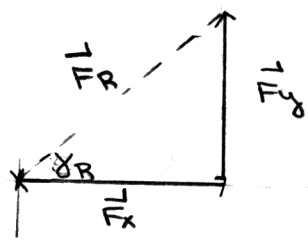
Non-collinear Vectors
- vectors that exist in more than one dimension



2 State the two equations required to add perpendicular vectors.

$\vec{F}_R$ $\sqrt{\vec{F}_x^{\,2} + \vec{F}_y^{\,2}}$ $\gamma_R = \tan^{-1}\left[\frac{\vec{F}_y}{\vec{F}_x}\right]$

3 Using the variables from the equations in question 2, label an appropriate right angle triangle.



if $\vec{F}_x$ and $\vec{F}_y$ are positive,

4 How do you determine the x and y-component of a non-collinear vector?

x-component of a non-collinear vector

$$F_x = F\cos\theta$$

y component of a non-collinear vector

$$F_y = F\sin\theta$$

Where θ is measured counterclockwise from the positive x-axis.