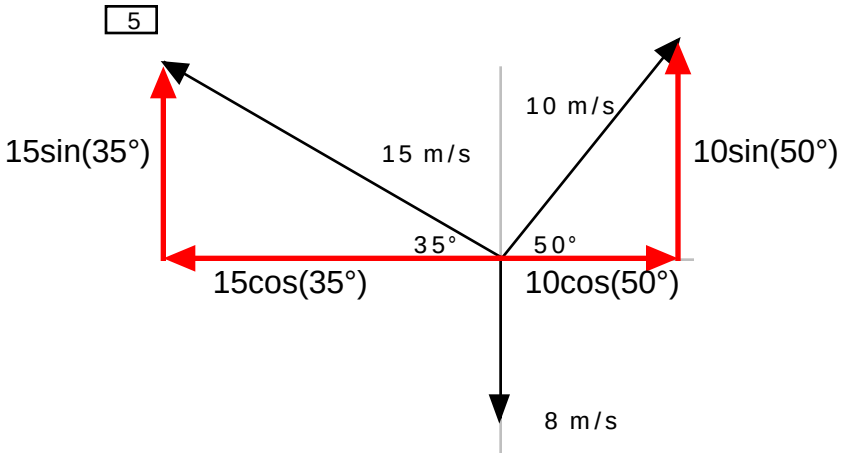
5

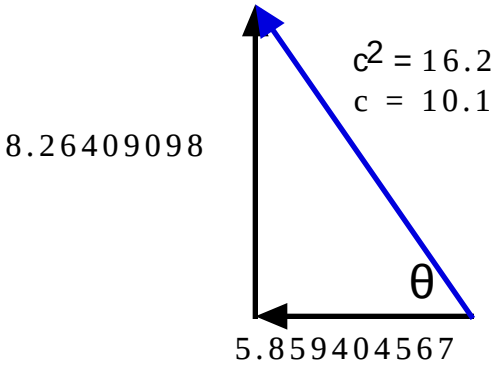


$\overset{+}{\rightarrow}\Sigma R_x = 10\cos(50°)-15\cos(35°)$

$\overset{+}{\rightarrow}\Sigma R_x = -5.859404567$ (negative sign means it points left.)

$\overset{+}{\uparrow}\Sigma R_y = 10\sin(50°)+15\sin(35°)-8$

$\overset{+}{\uparrow}\Sigma R_y = 8.26409098$



$c^2 = 16.26409098^2 + 5.859404567^2$

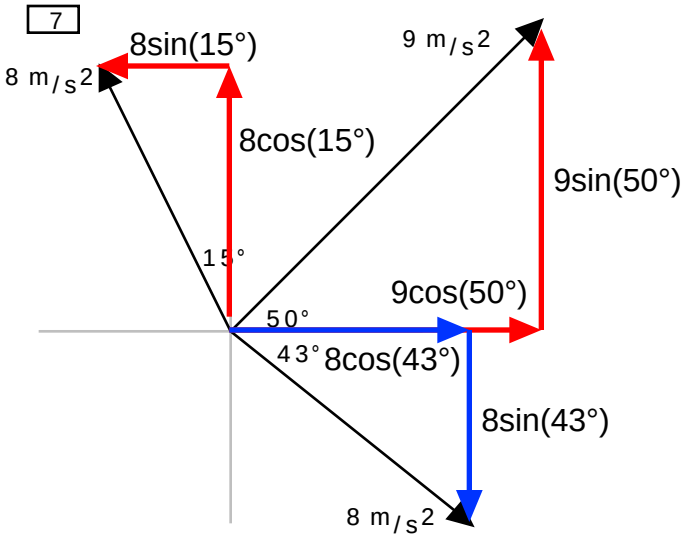
$c = 10.13053906$

$$\tan(\theta) = \frac{8.26409098}{5.859404567}$$

θ = 54.66° N of W

10.13 m/s, 55.66° N of W or 35.34° W of N

7



$\xrightarrow{+}\Sigma R_x = 8\cos(43°) + 9\cos(50°) - 8\sin(15°)$

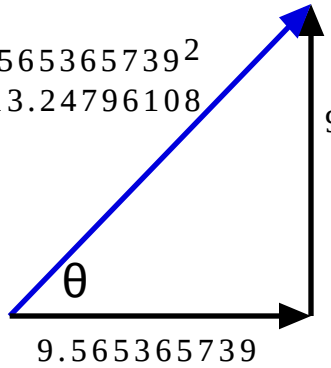
$\xrightarrow{+}\Sigma R_x = 9.565365739$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y = 9\sin(50°) + 8\cos(15°) - 8\sin(43°)$

$+\uparrow \Sigma R_y = 9.165819718$ (Positive sign means it points up.)

$c^2 = 9.165819718^2 + 9.565365739^2$

$c = 13.24796108$

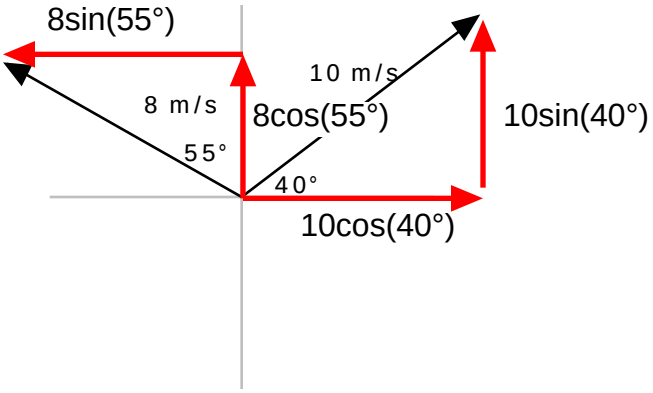


$$\tan(\theta) = \frac{9.165819718}{9.565365739}$$

θ =43.77803624° N of E

13.25 m/s^2, 43.78° N of E

1



$\xrightarrow{+}\Sigma R_x = 10\cos(40°) - 8\sin(55°)$

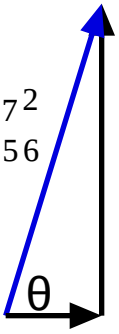
$\xrightarrow{+}\Sigma R_x = 1.107228077$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y = 8\cos(55°) + 10\sin(40°)$

$+\uparrow \Sigma R_y = 11.01648759$ (Positive sign means it points up.)

$c^2 = 11.01648759^2 + 1.107228077^2$

$c = 11.07198956$

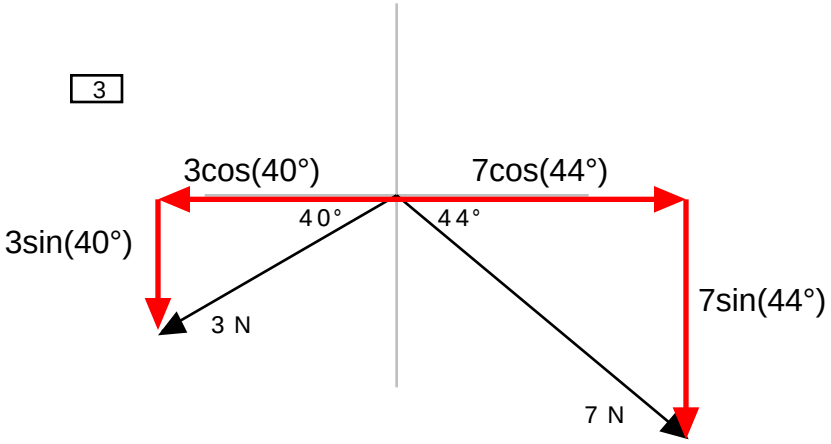


$\tan(\theta) = \frac{11.01648759}{1.107228077}$

θ =84.26° N of E

11.07 m/s, 84.26° N of E

3

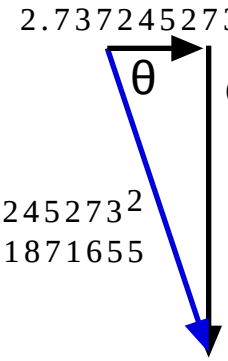


$+\rightarrow \Sigma R_x = 7\cos(44°) - 3\cos(40°)$

$+\rightarrow \Sigma R_x = 2.737245273$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y = -3\sin(40°) - 7\sin(44°)$

$+\uparrow \Sigma R_y = -6.790971422$ (negative sign means it points down.)



$c^2 = 6.790971422^2 + 2.737245273^2$

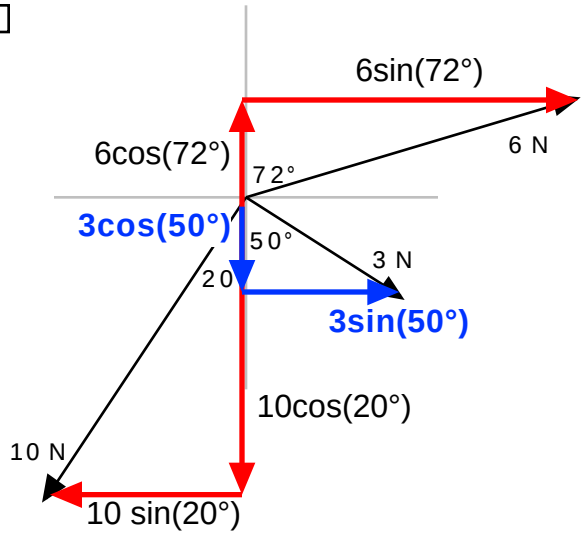
$c = 7.321871655$

$\tan(\theta) = \frac{6.790971422}{2.737245273}$

θ =21.95294615° S of E

7.32 N, 21.95° E of S or 68.05° S of E

6

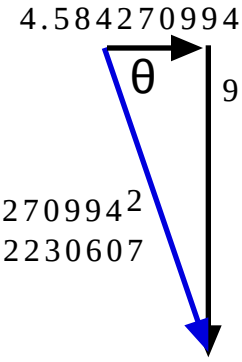


$\xrightarrow{+}\Sigma R_x =$ 6sin(72°) + **3sin(50°)** - 10 sin(20°)

$\xrightarrow{+}\Sigma R_x = 4.584270994$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y =$ 6cos(72°) - **3cos(50°)** - 10cos(20°)

$+\uparrow \Sigma R_y = -9.471187071$ (negative sign means it points down.)



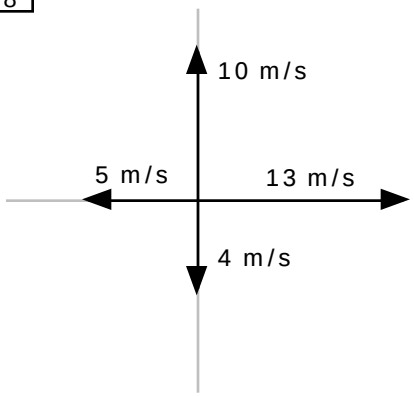
$c^2 = 9.471187071^2 + 4.584270994^2$

$c = 10.52230607$

$\tan(\theta) = \frac{9.471187071}{4.584270994}$

10.52 N, 64.17° S of E

8

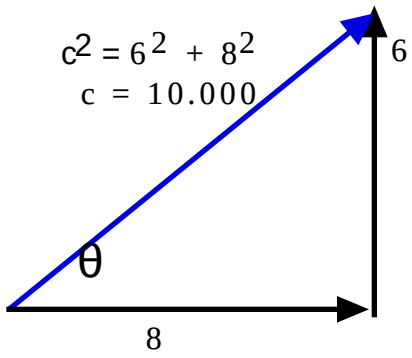


$\overset{+}{\rightarrow}\Sigma R_x = 13 - 5$

$\overset{+}{\rightarrow}\Sigma R_x = 8$ (Positive sign means it points right.)

$\overset{+}{\uparrow}\Sigma R_y = 10 - 4$

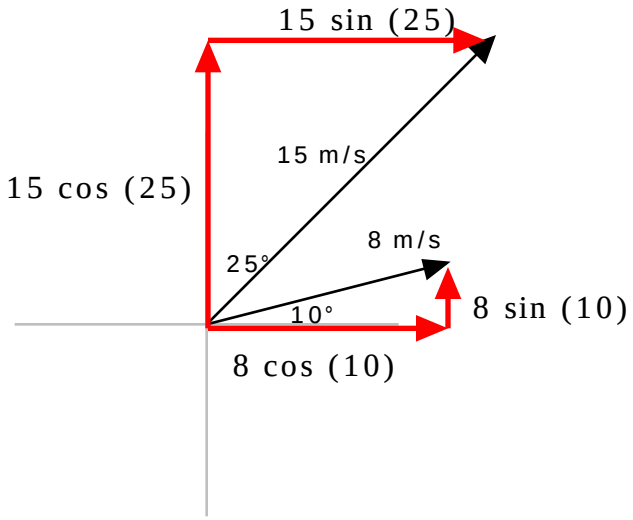
$\overset{+}{\uparrow}\Sigma R_y = 6$ (positve sign means it points up.)



$\tan(\theta) = \frac{6}{8}$

10.00 m/s, 36.87° N of E

2



$\xrightarrow{+}\Sigma R_x = 8\cos(10) + 15\sin(25)$

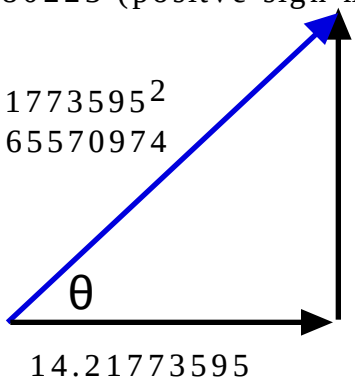
$\xrightarrow{+}\Sigma R_x = 14.21773595$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y = 8\sin(10) + 15\cos(25)$

$+\uparrow \Sigma R_y = 14.98380223$ (positve sign means it points up.)

$c^2 = 14.98380223^2 + 14.21773595^2$

$c = 20.65570974$

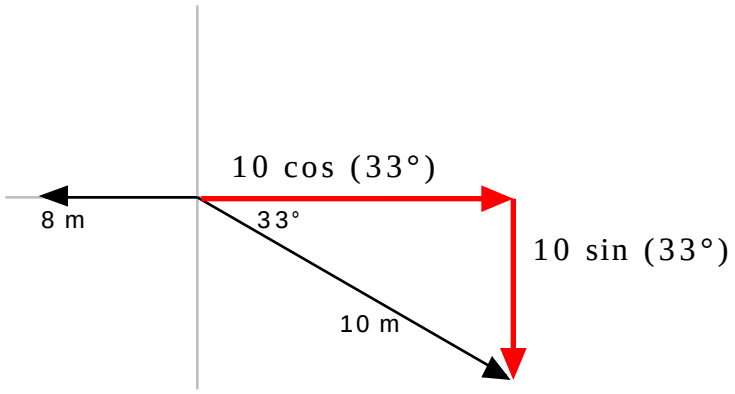


$\tan(\theta) = \frac{14.98380223}{14.21773595}$

θ =46.50273932° N of E

20.66 m/s, 46.50° N of E

4

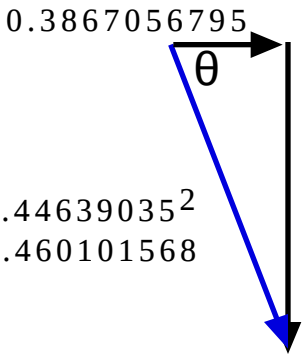


$\xrightarrow{+} \Sigma R_x = 10 \cos(33°) - 8$

$\xrightarrow{+} \Sigma R_x = 0.3867056795$ (Positive sign means it points right.)

$+\uparrow \Sigma R_y = -10 \sin(33°)$

$+\uparrow \Sigma R_y = -4.44639035$ (negative sign means it points down.)



$c^2 = 0.3867056795^2 + 4.44639035^2$

$c = 5.460101568$

$\tan(\theta) = \frac{4.44639035}{0.3867056795}$

θ =85.93868941° S of E

5.46 m, 85.94° s of E