

Before we begin, are there any questions from last day's work?

5.5.1 pp. 62-64 10-12, 15

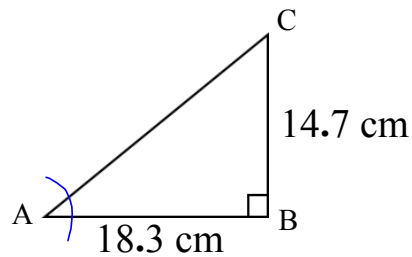
pp. 70-73 6, 18 or 19, 22, 25

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) distinguish between vector and scalar quantities.

Warm-up: Determine the measure of $\angle A$.



BA

$$\tan A = \frac{14.7}{18.3}$$

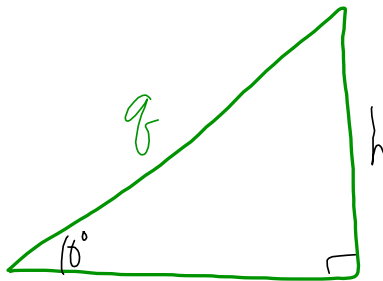
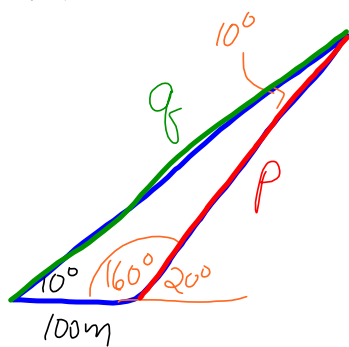
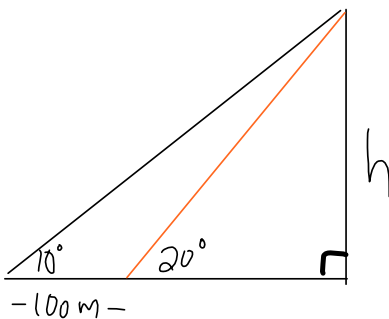
$$A = \tan^{-1}\left(\frac{14.7}{18.3}\right)$$

$$\approx 38.774$$

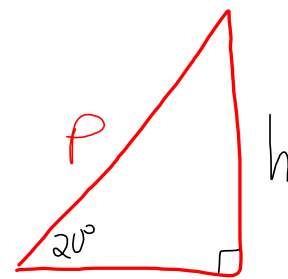
$$\approx 38.77^\circ$$

p. 73

18. From a certain point, the angle of elevation to the top of a church steeple is 10° . At a point 100 m closer to the steeple, the angle of elevation is 20° . Calculate the height of the steeple.



$$\sin 10^\circ = \frac{h}{q}$$



$$\sin 20^\circ = \frac{h}{p}$$

$$\sin 20^\circ = \frac{h}{100}$$

$$h = 100 \sin 20^\circ$$

$$\approx 34.20$$

$$\approx 34.2 \text{ m}$$

$$\frac{p}{\sin 10^\circ} = \frac{100}{\sin 10^\circ}$$

$$\therefore p = 100$$

5.6.1: Introduction to Vectors

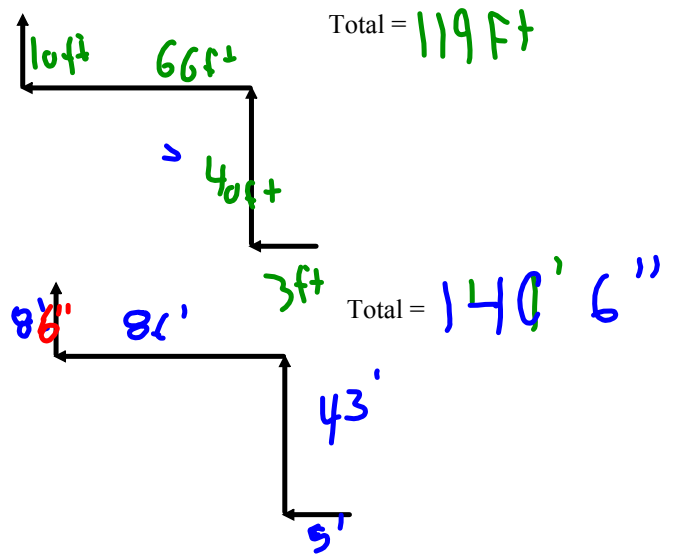
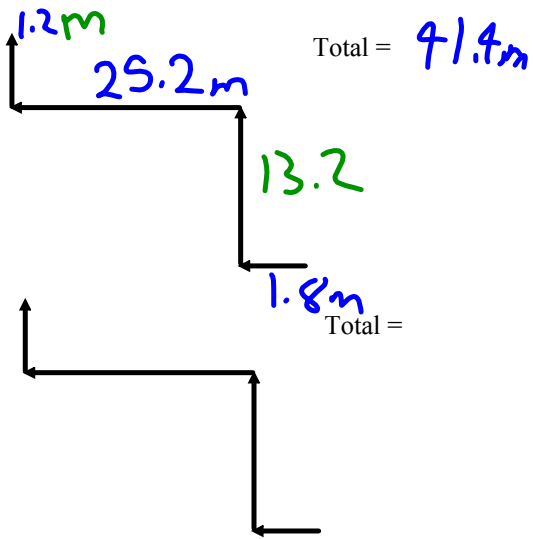
Date: Nov. 20/19

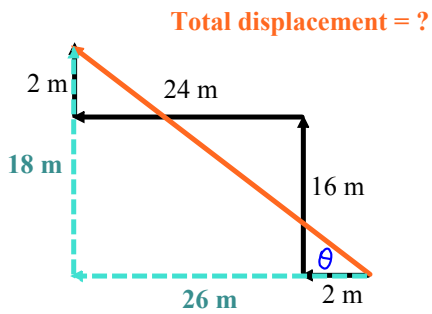
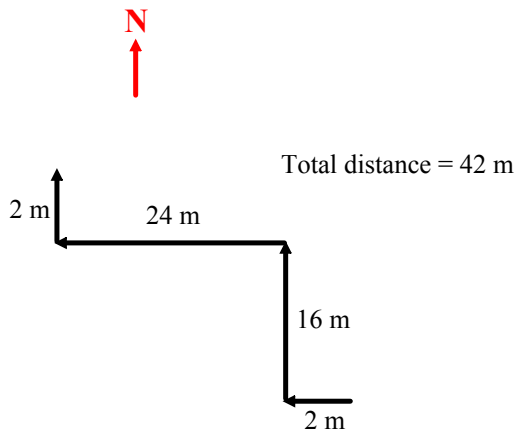
1. Using **PowerPoint (PPT 5.6.1)**, read through careers involving vectors, **and complete 5.6.2** next page (p.2)
2. Using powerpoint (PPT 5.6.1), discuss vectors versus scalars, **and complete 5.6.3**
3. In groups of 4, **complete 5.6.5.** p.3
How far is it from our classroom to Room 2505 (SKY Radio Lab)?
4. If time, present/compare answers for 5.6.5 p.4
Homework: 5.6.6 Vector Analysis

5.6.2

| Vectors and Language | Vectors in Sports | Vectors and Visuals |
|--|--|---|
| <p>Name the career where vectors are used? linguistics</p> <p>How are the vectors used in this career? mapping the interaction of words or bits of text</p> <p>improving: speech recognition software, and search engines</p> | <p>Name the career where vectors are used? aerodynamics</p> <p>How are the vectors used in this career? studying forces like wind and spin</p> <p>modifying the shapes, the car body, or the ball</p> | <p>Name the career where vectors are used? computer animation</p> <p>How are the vectors used in this career? creating movement effects, like wind and clouds</p> |
| <p>After listening and discussing the various careers, why would it be necessary for you to learn about vectors?</p> | | |

5.6.5 Results





$$\begin{aligned}
 |\vec{d}|^2 &= 18^2 + 26^2 \\
 &= 1000 \\
 |\vec{d}| &= \sqrt{\quad} \\
 &\doteq 31.6227 \\
 &\doteq 31.623 \text{ m}
 \end{aligned}$$

$$\begin{aligned}
 \tan \theta &= \frac{18}{26} \\
 \theta &\doteq 34.695 \\
 &\doteq 34.70^\circ
 \end{aligned}$$

..the displacement is 31.623 m [W 34.7° N]

or
or bearing

