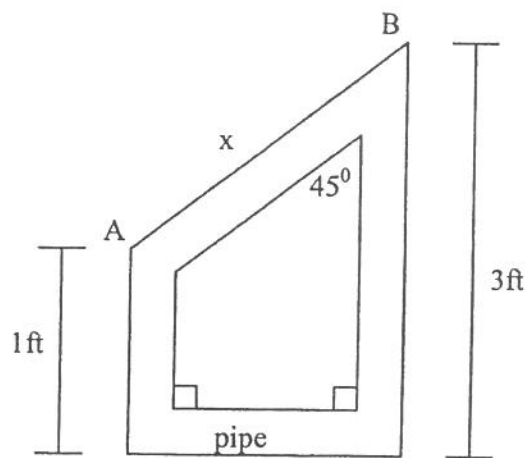


Triangles and Pipes

The Army Core of Engineers is devising an underground sewer system for a major subdivision as shown below.



1. Find the length of pipe connecting A to B with the given measures.
2. The contractors have decided to explore the option if angle B is 30° . Determine the length of AB for this option.
3. Cal Construction bought a pipe of length 6 feet for \overline{AB} . Find the angle at which the pipes would need to be aligned for the new length of pipe purchased.

Topic: Right Triangle Trig
ORQ Special Right Triangles/Trig.

After section 9.2 (PH)
After section 9.5 (ML)

Triangles and Pipes Rubric

Question 1:

2 points total

1 point for finding the leg of the triangle = 2 feet

1 point for correct calculation of $AB = 2\sqrt{2}$

Question 2:

3 points total

1 point for setting up the equation $2 = x\sqrt{3}$

1 point for correct work $\frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

1 point for correct answer $\frac{2\sqrt{3}}{3}$

Question 3:

3 points total

1 point for choosing to use cosine

1 point for solving $\cos x = \frac{2}{6}$

$$\cos x = \frac{1}{3}$$

$$\cos^{-1}x = \frac{1}{3}$$

1 point for the correct answer $x = 70.5^\circ$

Scale

4 – 8 points

3 - 5-7 points

2 – 3-4 points

1 – 1-2 points