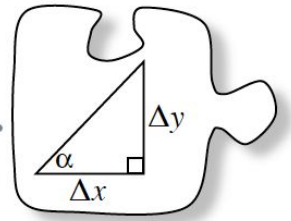


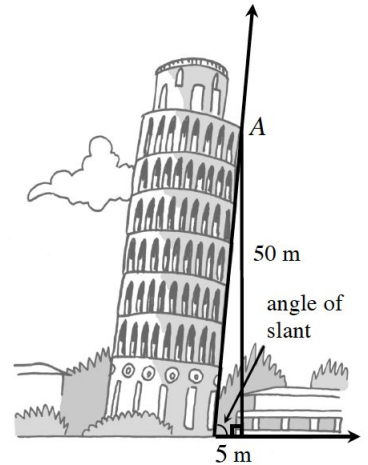
3.2.4 What about other right triangles?

The Tangent Ratio



3-99 - Will it Topple?

- a) What is the slope ratio for the tower?
- b) Figure out the angle at which the Leaning Tower of Pisa slants.
- c) Do you think it is in immediate danger of collapse?

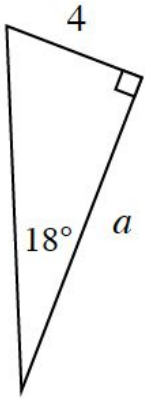


3-100 -

Solve for the variables in the triangles below.

<p>a)</p>	<p>b)</p>	<p>c)</p>
<p>a) Expression / Calculation:</p> <p>$w =$ _____</p> <p>$\theta =$ _____</p>	<p>b) Expression / Calculation:</p> <p>$z =$ _____</p> <p>$\theta =$ _____</p>	<p>c) Expression / Calculation:</p> <p>$x =$ _____</p> <p>$\theta =$ _____</p>

3-101 - Multiple Methods



a) Will Tiana’s method work? If so, solve for *a*. If not, explain why not.

Expression / Calculations:	<i>a</i> = _____
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b) How can Mae Lin tell?

c) What if they use 72° as the slope angle?

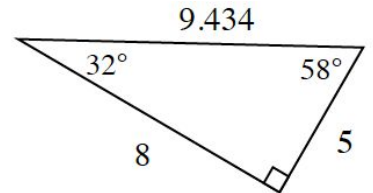
Expression / Calculations:	<i>a</i> = _____
	Δx = _____

d) Use Eddie’s observation from part c to confirm your answer for part a. (You should create a ratio to solve for *a*.)

3-102 - Using a Scientific Calculator

a) According to the triangle at right, what is the slope ratio of 32° as a fraction, a decimal, and a percent?

$$\frac{\Delta y}{\Delta x} = \text{_____} = \text{__._____} = \text{_____} \%$$



b) What is the slope ratio for the 58° angle?

$$\frac{\Delta y}{\Delta x} = \text{_____} = \text{__._____} = \text{_____} \%$$

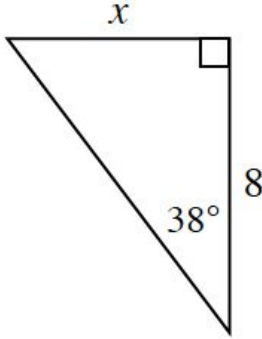
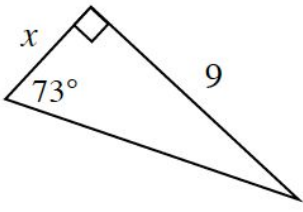
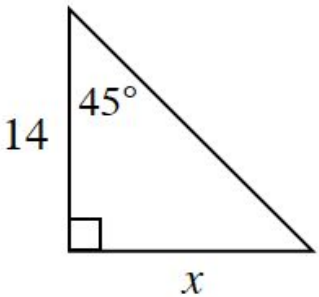
c) Test your calculators. Do you get the same answers?

d) The ratio in a right triangle that you’ve been studying is called the ***tangent ratio***. 32° is written as “**tan 32° = 5/8.**” Write an equation for the right triangle using tan 58°.

1-103 - Application

Label the legs on the triangles Δy and Δx based on the given slope angle.

Then write an equation (such as $\tan 14^\circ = \frac{x}{5}$). Use your scientific calculator to compute a slope ratio for the given angle, and solve for x .

<p>a)</p> 	<p>b)</p> 	<p>c)</p> 
<p>a) Equation:</p> <p>Calculation:</p>	<p>b) Equation:</p> <p>Calculation:</p>	<p>c) Equation:</p> <p>Calculation:</p>
<p>a)</p> <p>$x = \underline{\hspace{2cm}}$</p>	<p>b)</p> <p>$x = \underline{\hspace{2cm}}$</p>	<p>c)</p> <p>$x = \underline{\hspace{2cm}}$</p>