PROBLEM SOLVED
MAKING SENSE OF MATHEMATICS

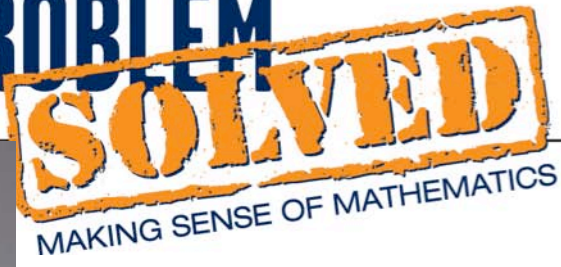| Scene		Full Transcript
1	**Carlos:**	Whoa! This is a little higher than I thought.
		Hey, what's up? It's Carlos. And this is my worst enemy, a ladder. I'm a little afraid of heights. But, anything for a friend, right?
2	**Voice-Over Carlos:**	Tom's dad is looking to re-shingle their roof, but he's uncertain about the amount of shingles he will need. The challenge is that the roof includes several regions that are shaped like trapezoids.
3	**Carlos:**	He knows the area one bundle of shingles will cover but he can't remember how to find the area of a trapezoid. Oh, I think we can be of some assistance. Meet me on the roof, and we'll get another *Problem Solved*. Could somebody please hold this ladder? What?
4	**Carlos:**	Now, before we get started, we need to take a minute and think about our old friend, the trapezoid.
5	**Voice-Over Carlos:**	If you look around, you'll find trapezoids everywhere. They're simply quadrilaterals with at least one pair of parallel sides, which are the bases.
		The height is the distance between the two bases measured along a line that is perpendicular to them. Perpendicular lines form right angles. The height can also be a side of the trapezoid if that side is perpendicular to the bases.
		Some people get tripped up thinking a trapezoid has to sit on a base; it doesn't. Watch out for that.
		One section of this roof we're shingling is a trapezoid. Now, if you're like Tom's dad, you just want me to give you the formula so you can do the calculations.
6	**Carlos:**	Not so fast, I always like to compare a new concept to something I already know. You should know how to calculate the area of a parallelogram. Remember the formula for the area of a parallelogram is base times height.
7	**Voice-Over Carlos:**	We have a trapezoid. We can copy and move it to form a parallelogram. Please, please, hold your applause.
		The area of a parallelogram is found by multiplying the base times the height. The base of this parallelogram equals base one plus base two. Since these two trapezoids make a parallelogram, then the area of one trapezoid is half of the area of the parallelogram. The area of a trapezoid is ½ the sum of the bases times the height.

MakingSense

8	**Voice-Over Carlos:**	Try the formula with this section of the roof. The bases are 16 feet and 10 feet and the height is 12 feet. When you do the calculation, you get 156 square feet. It works for any trapezoid, anywhere, and in any position. Once we find the area of each section of the roof, we'll know how many bundles of shingles to buy.
9	**Carlos:**	Finding the area of a trapezoid can be painless if you just consider what you already know. *Problem Solved.*
		Ok, ha, ha, very funny put the ladder back guys. Guys?

MakingSense