## Unit 5 Lesson 18: Scaling Two Dimensions

### 1 Tripling Statements (Warm up)

#### Student Task Statement

$m$, $n$, $a$, $b$, and $c$ all represent positive integers. Consider these two equations: $m=a+b+c$ $n=abc$

1. Which of these statements are true? Select **all** that apply.
	1. If $a$ is tripled, $m$ is tripled.
	2. If $a$, $b$, and $c$ are all tripled, then $m$ is tripled.
	3. If $a$ is tripled, $n$ is tripled.
	4. If $a$, $b$, and $c$ are all tripled, then $n$ is tripled.
2. Create a true statement of your own about one of the equations.

### 2 A Square Base (Optional)

#### Student Task Statement

Clare sketches a rectangular prism with a height of 11 and a square base and labels the edges of the base $s$. She asks Han what he thinks will happen to the volume of the rectangular prism if she triples $s$.

Han says the volume will be 9 times bigger. Is he right? Explain or show your reasoning.

### 3 Playing with Cones (Optional)

#### Student Task Statement

There are many cones with a height of 7 units. Let $r$ represent the radius and $V$ represent the volume of these cones.

1. Write an equation that expresses the relationship between $V$ and $r$. Use 3.14 as an approximation for $π$.
2. Predict what happens to the volume if you triple the value of $r$.
3. Graph this equation.
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1. What happens to the volume if you triple $r$? Where do you see this in the graph? How can you see it algebraically?

#### Images for Activity Synthesis







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