## BLM 9.4.2

## Practice: Maximize the Volume of a Square-Based Prism

For all questions, round your answer to the nearest tenth of a unit when necessary.

1. Each square-based prism has surface area  $216 \text{ cm}^2$ .



- a) Find the volume of each prism.
- b) Order the prisms from greatest to least volume.
- 2. Each square-based prism has surface area 96 cm<sup>2</sup>. Order the prisms from greatest to least volume.

Prism A



**3.** Each square-based prism has the same surface area. Order the prisms from greatest to least volume.



- 4. Find the dimensions of the square-based prism with maximum volume, given each surface area.
  - **a)**  $294 \text{ cm}^2$  **b)**  $486 \text{ cm}^2$
  - c)  $1176 \text{ cm}^2$  d)  $1350 \text{ cm}^2$
  - **e)**  $497 \text{ cm}^2$  **f)**  $662 \text{ cm}^2$

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