Use the rectangular prism for Exercises 8 and 9.

8. Find the surface area and volume for a rectangular prism that is larger than the one shown by a scale factor of 10. **102,400 cm²; 1,920,000 cm³**
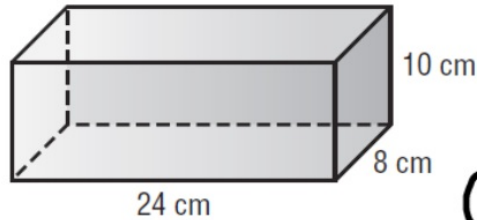
S.A:

$2 \times 24 \times 8 = 384$
$2 \times 8 \times 10 = 160$
$2 \times 24 \times 10 = 480$
$\overline{\qquad}$
1024 cm²

$\overline{\qquad}$

Volume:

$24 \times 8 \times 10 = 1920 \text{ cm}^3$

10 cm
8 cm
24 cm

S.A:

$(10)^2 (1024)$
102,400

Volume:

$(10)^3 1920$
$= 1,920,000$

3. MAIL A shipping box has a surface area of 320 square inches. What is the surface area of a similar box that is larger by a scale factor of 1.2?

460.8 in²

4. CANS A can of food has a volume of 344 cubic centimeters. What is the volume of a similar can that is smaller by a scale factor of $\frac{1}{2}$? **43 cm³**

③ … area!

$(1.2)^2(320)$

1.2 × 1.2 × 320 = 460.8

460.8

④ … volume!

$\left(\frac{1}{2}\right)^3 344$

?.5

344 × 0.5 × 0.5 × 0.5 = 43

43

Calculator

344 ÷ 2 ÷ 2 ÷ 2 = 43

43