Volume of Prisms and Cylinder

- the measure of the amount of space a 3-d shape occupies.
  - 2 liter sodas → how much soda the bottle can hold
  - popcorn bucket → how much popcorn the bucket can hold

formula: $V = Bh$ → height of the prism

volume ← V

B → area of the base

cylinder: base shape: circle: πr^2

$V = Bh = V = \pi r^2 h$

rectangular prism: base shape: ▭ : lw

$V = Bh = V = lwh$

triangular prism: base shape: $\triangle$: $\frac{bh}{2}$

$V = Bh = V = \frac{bh}{2} \cdot h$

answers are in cubic units cm^3 in^3

ex.) $l = 10ft$
$w = 9ft$
$h = 2ft$

Calculate volume

$V = lwh$
$V = 10 \cdot 9 \cdot 2$
$V = 180\ ft^3$

pg. 514 your turn now

① rectangular prism

$V = Bh$
$V = lwh$
$V = 6 \cdot 11 \cdot 3$
$V = 198\ ft^3$

CW

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② triangular prism

$V = Bh$
$V = \frac{bh}{2} \cdot h$
$V = \frac{12 \cdot 8}{2} \cdot 6$
$V = 288\ mm^3$

③ cylinder

$V = Bh$
$V = \pi r^2 h$
$V = \pi(1.5^2)10$
$V = 70.7\ in^3$