

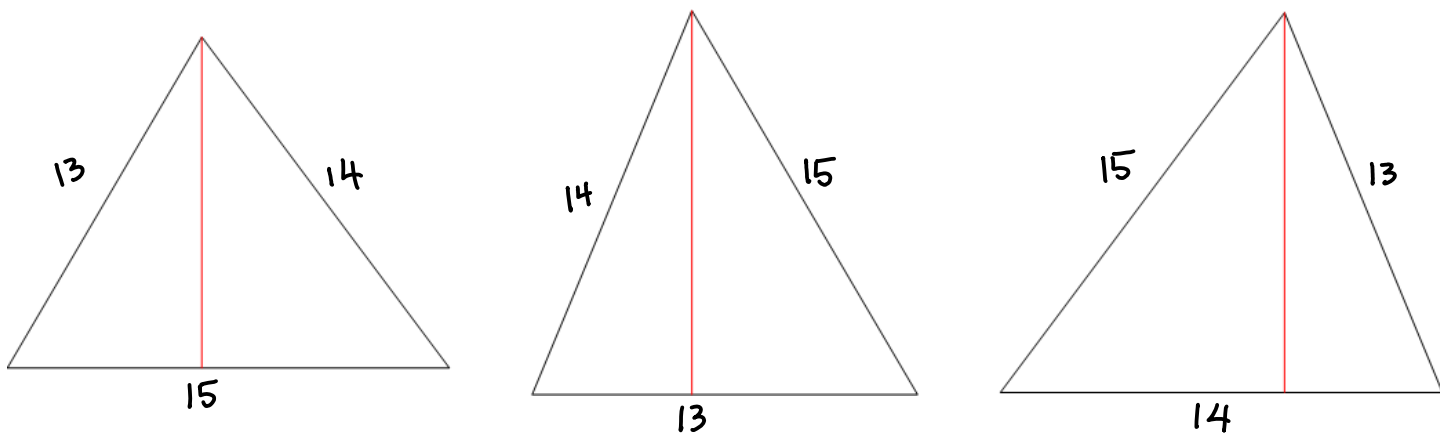
Day 6 (July 12, 2011)

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Problem 2



You can use a different altitude than the one drawn. One may be nicer?

Three integers add up to 24 and multiply to 240.
What are the integers?

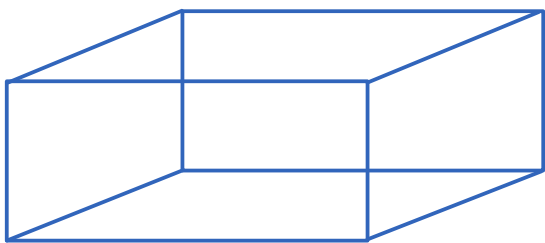
If one # is 1, then the other two add to 23
and multiply to 240. Err....

If one # is 2.... 2, 10 & 12 works!

If one # is 3.... 3, 5 & 16 works!

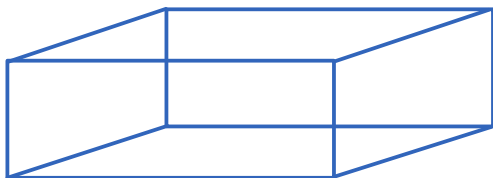
↑
If these are box dimensions,
they have same volume but different
surface areas.

Bonus Box Bonanza: Find SA and volume.



$$\frac{1}{2} \text{ by } \frac{1}{10} \text{ by } \frac{1}{12} \quad \text{Vol} = \frac{1}{240}$$

$$\text{SA} = 2 \left(\frac{1}{2} \cdot \frac{1}{10} + \frac{1}{2} \cdot \frac{1}{12} + \frac{1}{10} \cdot \frac{1}{12} \right) = \frac{1}{5} = \frac{48}{240}$$



$$\frac{1}{3} \text{ by } \frac{1}{5} \text{ by } \frac{1}{16} \quad \text{Vol} = \frac{1}{240}$$

$$\text{SA} = 2 \left(\frac{1}{3} \cdot \frac{1}{5} + \frac{1}{3} \cdot \frac{1}{16} + \frac{1}{5} \cdot \frac{1}{16} \right) = \frac{1}{5}$$