

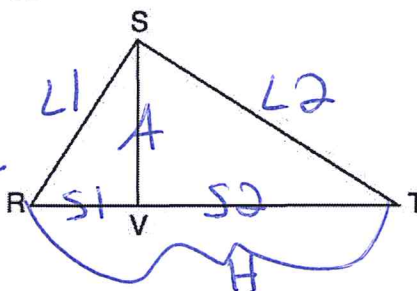
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Geometry

Determining If a Proportion Is Correct (Candy Corn and HLLS SAAS)

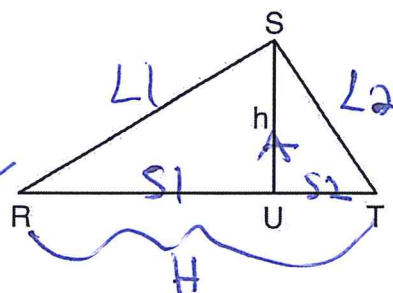
1. In right triangle RST below, altitude \overline{SV} is drawn to hypotenuse \overline{RT} . Which of the following proportions is true?

- ~~1) $\frac{RV}{VS} = \frac{VT}{VS}$ $\frac{S_1}{A} = \frac{S_2}{A}$~~
 ~~2) $\frac{RT}{RS} = \frac{RS}{VT}$ $\frac{H}{L_1} = \frac{L_1}{S_2}$~~
 3) $\frac{RT}{SV} = \frac{SV}{VT}$ $\frac{H}{A} = \frac{A}{S_2}$
 4) $\frac{RT}{ST} = \frac{ST}{VT}$ $\frac{H}{L_2} = \frac{L_2}{S_2}$ ✓



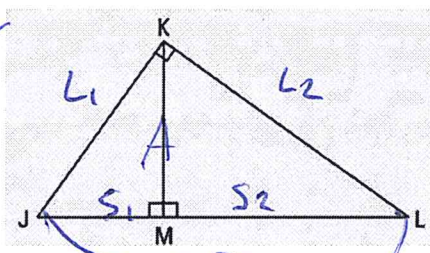
2. In right triangle RST below, altitude \overline{SU} is drawn to hypotenuse \overline{RT} . Which of the following proportions is *not* true?

- 1) $\frac{RU}{SU} = \frac{SU}{UT}$ $\frac{S_1}{A} = \frac{A}{S_2}$ ✓
 2) $\frac{SU}{RU} = \frac{RU}{UT}$ $\frac{A}{S_1} = \frac{S_1}{S_2}$ X
 3) $\frac{RT}{RS} = \frac{RS}{RU}$ $\frac{H}{L_1} = \frac{L_1}{S_1}$ ✓
 4) $\frac{TR}{ST} = \frac{ST}{UT}$ $\frac{H}{L_2} = \frac{L_2}{S_2}$ ✓



3. In right triangle JKL below, altitude \overline{KM} is drawn to hypotenuse \overline{JL} . Which of the following proportions is *not* true?

- 1) $\frac{JL}{JK} = \frac{JK}{JM}$ $\frac{H}{L_1} = \frac{L_1}{S_1}$ ✓
 2) $\frac{JM}{KM} = \frac{KM}{ML}$ $\frac{S_1}{A} = \frac{A}{S_2}$ ✓
 3) $\frac{JL}{KL} = \frac{KL}{JM}$ $\frac{H}{L_2} = \frac{L_2}{S_1}$ X
 4) $\frac{ML}{MK} = \frac{MK}{MJ}$ $\frac{S_2}{A} = \frac{A}{S_1}$ ✓

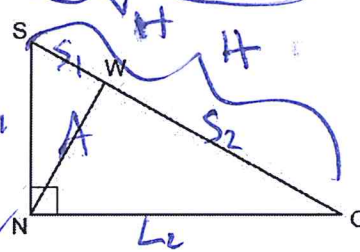


4. In right triangle SNO below, altitude \overline{NW} is drawn to hypotenuse \overline{SO} .

Which statement is *not* always true?

- 1) $\frac{SO}{SN} = \frac{SN}{SW}$ $\frac{H}{L_1} = \frac{L_1}{S_1}$ ✓
 2) $\frac{SW}{NS} = \frac{NS}{OW}$ $\frac{S_1}{L_1} = \frac{L_1}{S_2}$ X

- 3) $\frac{SO}{ON} = \frac{ON}{OW}$ $\frac{H}{L_2} = \frac{L_2}{S_2}$ ✓
 4) $\frac{OW}{NW} = \frac{NW}{SW}$ $\frac{S_2}{A} = \frac{A}{S_1}$ ✓



Candy Corn Problems: Is the Proportion True?

Have a picture of the original problem and the triangles separated.

If bases are not involved, see if it satisfies $\frac{top}{top} = \frac{bottom}{bottom} = \frac{side}{side}$

If bases are involved, separate the triangles and follow the same procedure from previous lesson.

¶ In the diagram below of $\triangle ACT$, \overleftrightarrow{ES} is drawn parallel to \overline{AT} such that E is on \overline{CA} and S is on \overline{CT} .

Which statement is always true?

- 1) $\frac{CE}{CA} = \frac{CS}{CT}$ *top to bottom = top to bottom*
- 2) $\frac{CE}{ES} = \frac{EA}{AT}$

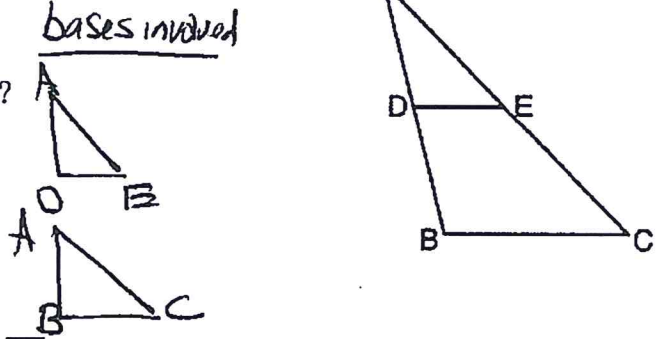
3) $\frac{CE}{EA} = \frac{CS}{ST}$ *top to bottom = top to bottom* ✓

4) $\frac{CE}{ST} = \frac{EA}{CS}$ *top left to right bottom* ✗

¶2. In $\triangle ABC$ below, \overline{DE} is drawn such that D and E are on \overline{AB} and \overline{AC} , respectively.

If $\overline{DE} \parallel \overline{BC}$, which equation will always be true?

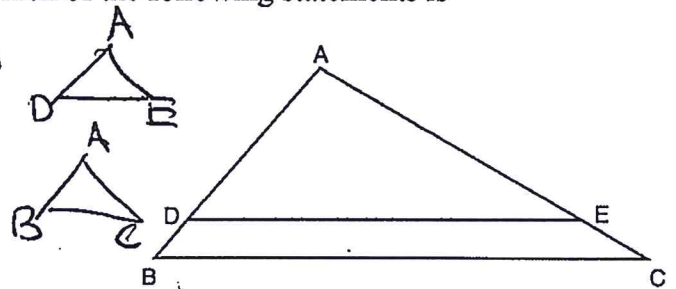
- 1) $\frac{AD}{DE} = \frac{DB}{BC}$
- 2) $\frac{AD}{DE} = \frac{AB}{BC}$
- 3) $\frac{AD}{BC} = \frac{DE}{DB}$
- 4) $\frac{AD}{BC} = \frac{DE}{AB}$



¶3. In the diagram of $\triangle ABC$ shown below, $\overline{DE} \parallel \overline{BC}$. Which of the following statements is

not true?

- 1) $\frac{AD}{DE} = \frac{AB}{BC}$ ✗
- 2) $\frac{BC}{DE} = \frac{CA}{EA}$ ✓
- 3) $\frac{AD}{AE} = \frac{DB}{AC}$ ✗ *top to top = bottom to side*
- 4) $\frac{DB}{EC} = \frac{AB}{AC}$ ✓ *bottom to bottom = side to side*



¶4. In the diagram below of right triangle AED , $\overline{BC} \parallel \overline{DE}$.

Which statement is always true?

- 1) $\frac{AC}{BC} = \frac{DE}{AE}$ ✗
- 2) $\frac{AB}{AD} = \frac{BC}{DE}$ ✓
- 3) $\frac{AC}{CE} = \frac{BC}{DE}$ ✗ *top to bottom = base to base*
- 4) $\frac{DE}{BC} = \frac{DB}{AB}$ ✗ *base to bottom = bottom to top*

