Candy Corn Problems

If the bases are not involved: $\dfrac{top}{top} = \dfrac{bottom}{bottom} = \dfrac{side}{side}$

If bases are involved: separate your triangles!

1. In the diagram of $\triangle ADC$ below, $\overline{EB} \parallel \overline{DC}$, $AE = 9$, $ED = 5$, and $AB = 9.2$.

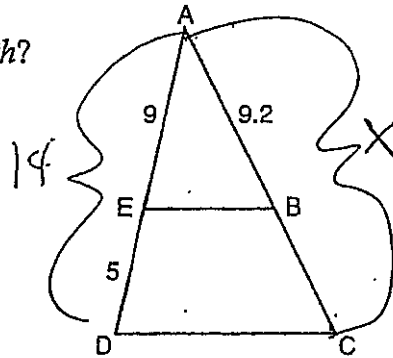What is the length of $\overline{AC}$, to the *nearest tenth*?
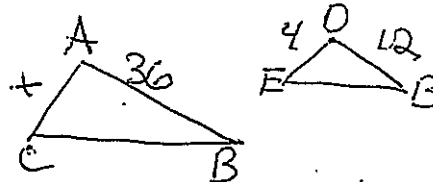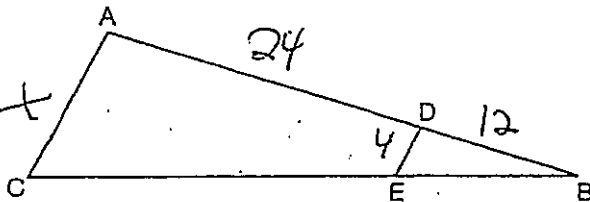1) 5.1
2) 5.2
3) 14.3
4) 14.4

bases not involved

$\dfrac{top}{top} = \dfrac{side}{side}$

$\dfrac{9}{9.2} = \dfrac{14}{x}$ $X = 14.3$

$9x = 128.8$

14

9   9.2   X

E   B

5

D   C

2. In the diagram of $\triangle ABC$, points D and E are on $\overline{AB}$ and $\overline{CB}$, respectively, such that $\overline{AC} \parallel \overline{DE}$.

bases involved
separate

24

D   12

4

C   E   B

A   36   B   C

4   D   12

E   B

If $AD = 24$, $DB = 12$, and $DE = 4$, what is the length of $\overline{AC}$?
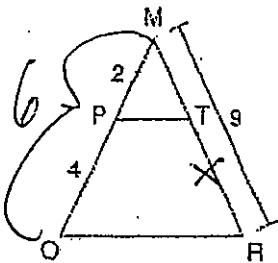1) 8
2) 12
3) 16
4) 72

$\dfrac{x}{4} = \dfrac{36}{12}$

$\dfrac{12x}{12} = \dfrac{144}{12}$

$x = 12$

3. Given $\triangle MRO$ shown below, with trapezoid $PTRO$, $MR = 9$, $MP = 2$, and $PO = 4$.

bases not involved

$\dfrac{bottom}{bottom} = \dfrac{side}{side}$

M

2

6   P   T   9

4   X

O   R

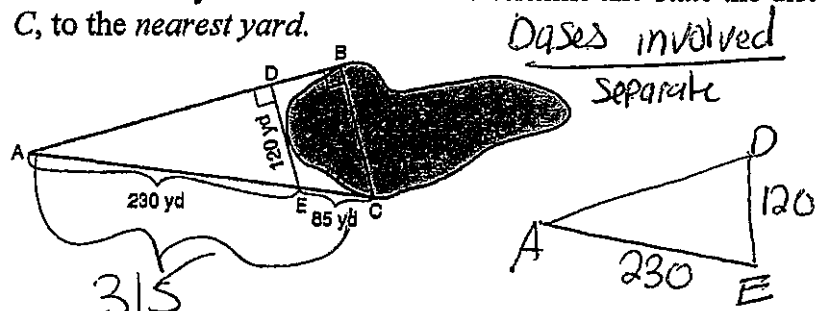What is the length of $\overline{TR}$?
1) 4.5
2) 5
3) 3
4) 6

$\dfrac{9}{x} = \dfrac{6}{9}$

$\dfrac{6x}{6} = \dfrac{36}{6}$

$x = 6$

4. To find the distance across a pond from point B to point C, a surveyor drew the diagram below. The measurements he made are indicated on his diagram.
Use the surveyor's information to determine and state the distance from point B to point C, to the *nearest yard*.
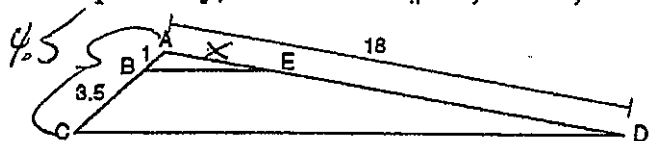
bases involved
Separate

$$\frac{230}{315} = \frac{120}{x}$$

$$\frac{230x}{230} = \frac{37800}{230}$$

$$x = 164$$

120 yd
230 yd
85 yd
315

120
230

315

5. In the diagram below, triangle ACD has points B and E on sides $\overline{AC}$ and $\overline{AD}$, respectively, such that $\overline{BE} \parallel \overline{CD}$, $AB = 1$, $BC = 3.5$, and $AD = 18$.
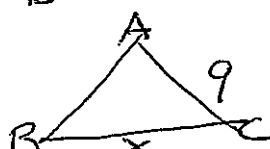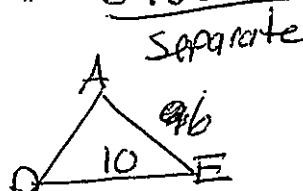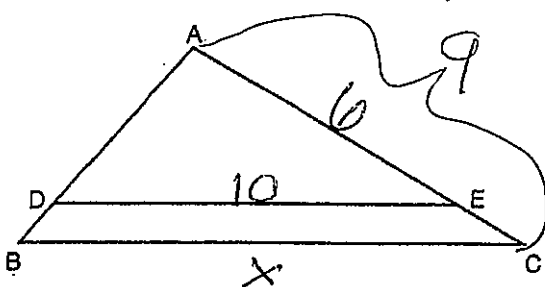
bases not involved

$$\frac{top}{top} = \frac{side}{side}$$

$$\frac{1}{x} = \frac{4.5}{18}$$

$$\frac{4.5x}{4.5} = \frac{18}{4.5}$$

$$x = 4.0$$

4.5
18
3.5
x

What is the length of $\overline{AE}$, to the *nearest tenth*?

6. In the diagram of $\triangle ABC$ shown below, $\overline{DE} \parallel \overline{BC}$. *bases involved*
If $\overline{AE} = 6$, $\overline{DE} = 10$, and $\overline{AC} = 9$, find $\overline{BC}$
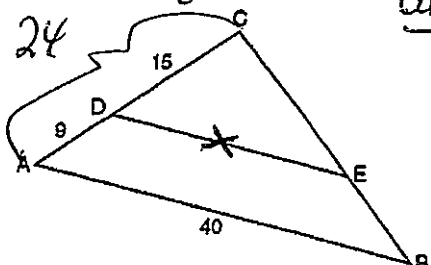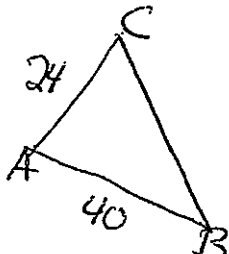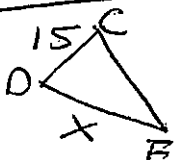
Separate

$$\frac{10}{x} = \frac{6}{9}$$

$$\frac{6x}{6} = \frac{90}{6}$$

$$x = 15$$

9 6
10
9
x

7. In the diagram of $\triangle ABC$ below, $\overline{DE}$ is parallel to $\overline{AB}$, $CD = 15$, $AD = 9$, and $AB = 40$.
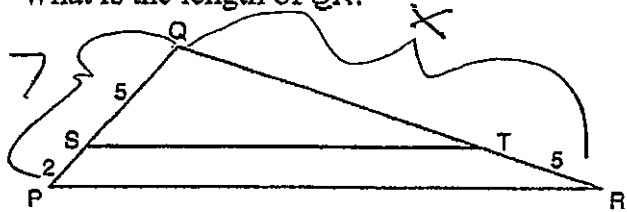Find the length of $\overline{DE}$. *bases involved*

$$\frac{15}{24} = \frac{x}{40}$$

$$\frac{24x}{24} = \frac{600}{24}$$

$$x = 25$$

24
15
9
40

8. In the diagram below of $\triangle PQR$, $\overline{ST}$ is drawn parallel to $\overline{PR}$, $PS = 2$, $SQ = 5$, and $TR = 5$
What is the length of $\overline{QR}$?   *bases not involved*

$$\frac{side}{side} = \frac{bottom}{bottom}$$

$$\frac{7}{x} = \frac{2}{5}$$

$$\frac{2x}{2} = \frac{35}{2}$$

$$x = 17.5$$

7
5
2
5

24

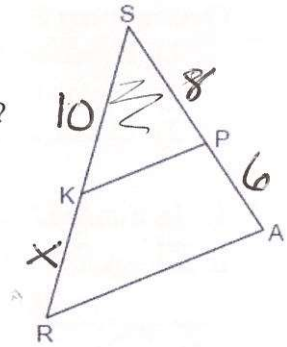9. In the diagram of $\triangle SRA$ below, $\overline{KP}$ is drawn such that $\angle SKP \cong \angle SRA$.

If $SK = 10$, $SP = 8$, and $PA = 6$, what is the length of $\overline{KR}$, to the *nearest tenth*?

1) 4.8
2) 7.5 ⟵ (circled)
3) 8.0
4) 13.3

$$\frac{top}{top} = \frac{bottom}{bottom}$$

$$\frac{10}{8} = \frac{x}{6} \qquad \frac{8x}{8} = \frac{60}{8}$$

$$x = 7.5$$

10. In triangle ABC below, D is a point on $\overline{AB}$ and E is a point on $\overline{AC}$, such that

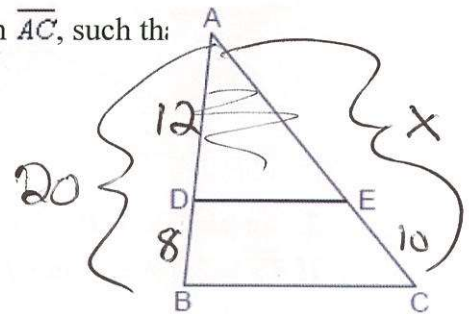If $AD = 12$, $DB = 8$, and $EC = 10$, what is the length of $\overline{AC}$?

1) 15
2) 22
3) 24
4) 25 ⟵ (circled)

$$\frac{Side}{Side} = \frac{bottom}{bottom}$$

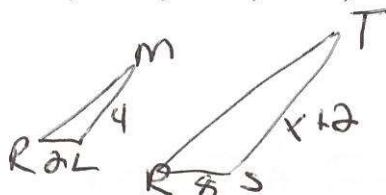$$\frac{20}{x} = \frac{8}{10} \qquad \frac{8x}{8} = \frac{200}{8}$$

$$x = 25$$

11. In the diagram below of $\triangle RST$, L is a point on $\overline{RS}$, and M is a point on $\overline{RT}$, such that $LM \parallel ST$.
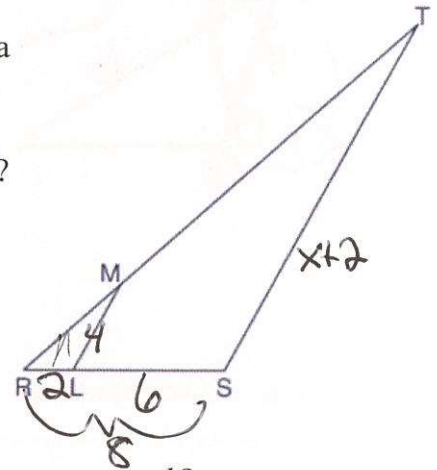
If $RL = 2$, $LS = 6$, $LM = 4$, and $ST = x + 2$, what is the length of $\overline{ST}$?

1) 10   2) 12   3) 14   4) 16   bases involved!

$$\frac{4}{x+2} = \frac{2}{8} \qquad 2x+4 = 32$$

$$2(x+2) = 32 \qquad 2x = 28$$

$$x = 14$$

12. In the diagram below of $\triangle CER$, $\overline{LA} \parallel \overline{CR}$.

If $CL = 3.5$, $LE = 7.5$, and $EA = 9.5$, what is the length of $\overline{AR}$, to the *nearest tenth*?

1) 5.5
2) 4.4 ⟵ (circled)
3) 3.0
4) 2.8

$$\frac{top}{top} = \frac{bottom}{bottom}$$

$$\frac{7.5}{9.5} = \frac{3.5}{x}$$

$$\frac{7.5x}{7.5} = \frac{33.25}{7.5}$$

$$x = 4.4$$

35