Name Schlansky

Mr. Schlansky

bases separate

no bases

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

Date _____

Geometry

Candy Corn Problems Regents Practice

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

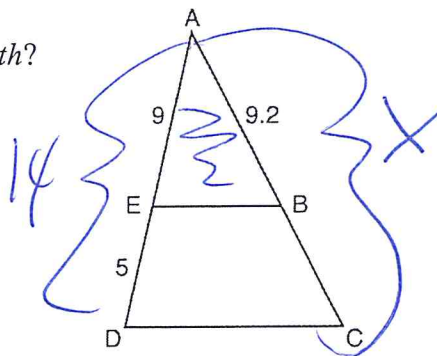What is the length of $\overline{AC}$, to the *nearest tenth*?
1) 5.1
2) 5.2
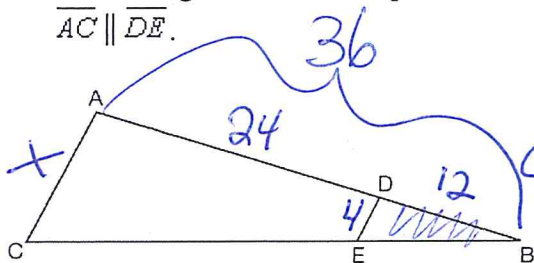3) 14.3
4) 14.4

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

$\frac{9}{9.2} = \frac{14}{x}$

$9x = 128.8$

$\frac{9x}{9} = \frac{128.8}{9}$

$x = 14.3$

14

9   9.2
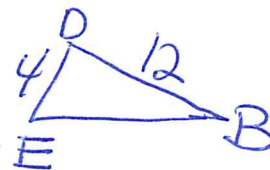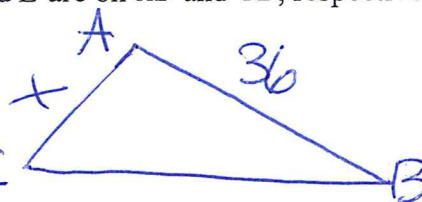
E   B

5

D   C

A

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

36

24

A

x

C   E   B

D 12

4

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

A   36

x

C   B
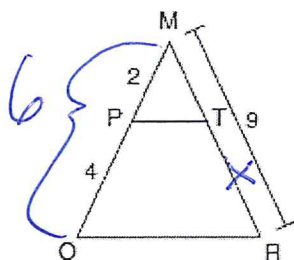
D   12

4   B

E

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

$12x = 144$

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

$x = 12$

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

M

2

P   T   9
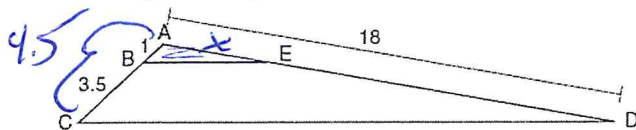
4

x

O   R

6

$\frac{6}{9} = \frac{4}{x}$

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

$6x = 36$

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

$x = 6$

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

4. 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 $AD = 18$.

What is the length of $\overline{AE}$, to the *nearest tenth*?
1) 14.0
2) 5.1
3) 3.3
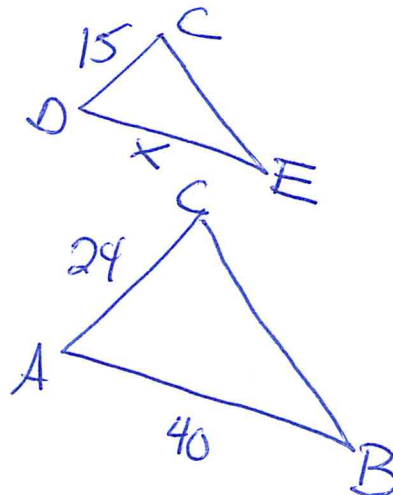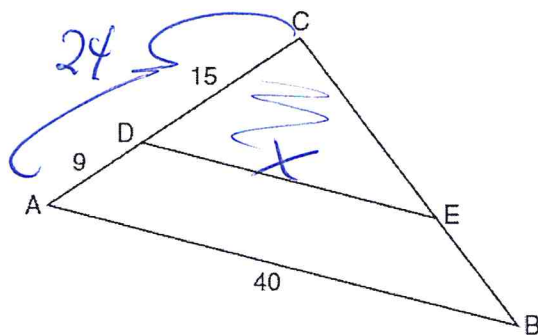4) 4.0

Handwritten work:
$$\frac{top}{top} = \frac{side}{side}$$
$$\frac{1}{x} = \frac{4.5}{18}$$
$$\frac{4.5x=18}{4.5} \quad \frac{}{4.5}$$
$$x=4$$

5. In the diagram of $\triangle ABC$ below, $\overline{DE}$ is parallel to $\overline{AB}$, $CD = 15$, $AD = 9$, and $AB = 40$.
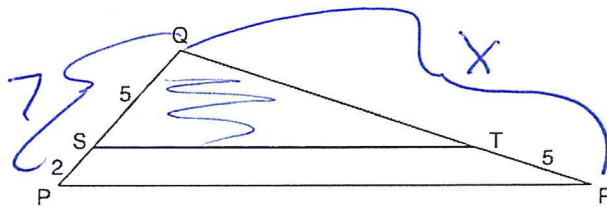

The length of $\overline{DE}$ is
1) 15
2) 24
3) 25
4) 30

Handwritten work:
$$\frac{15}{24} = \frac{x}{40}$$
$$\frac{24x=600}{24} \quad \frac{}{24}$$
$$x=25$$

6. 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 $\overline{QR}$?
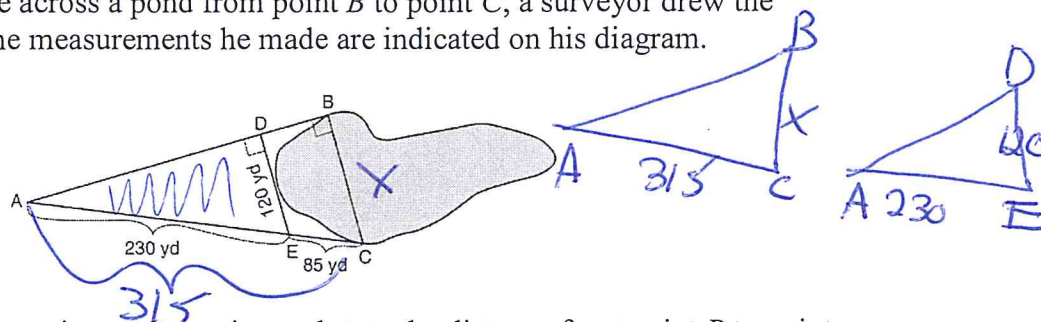1) 7
2) 2
3) $12\frac{1}{2}$
4) $17\frac{1}{2}$

Handwritten work:
$$\frac{side}{side} = \frac{bottom}{bottom}$$
$$\frac{7}{x} = \frac{2}{5}$$
$$2x=35$$
$$\frac{2x=35}{2}$$
$$x=17.5$$

7. 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*.

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

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

$$x = 164.3$$

8. In the diagram below, a large flagpole stands outside of an office building. Michael realizes that when he looks up from the ground 60 meters away from the flagpole, the top of the flagpole and the top of the building line up. If the flagpole is 35 meters tall and Michael is 170 meters from the building, how tall is the building, to the *nearest meter*?
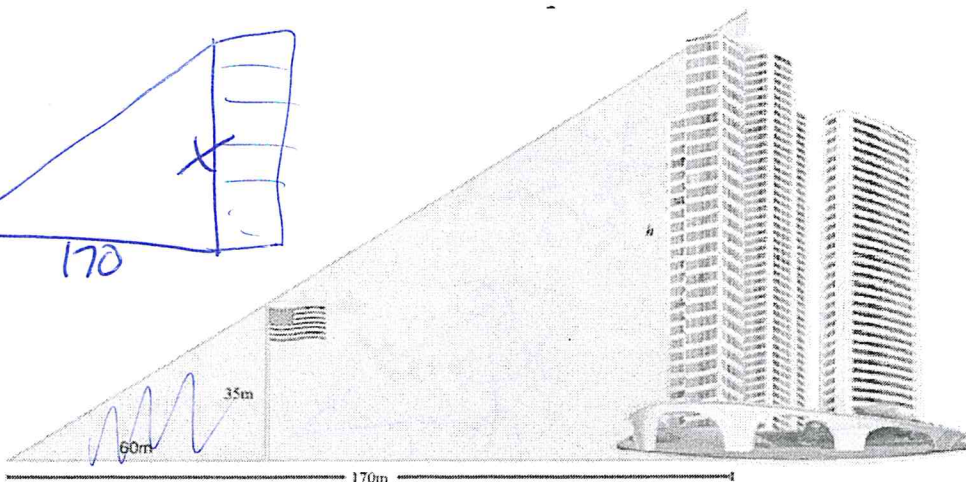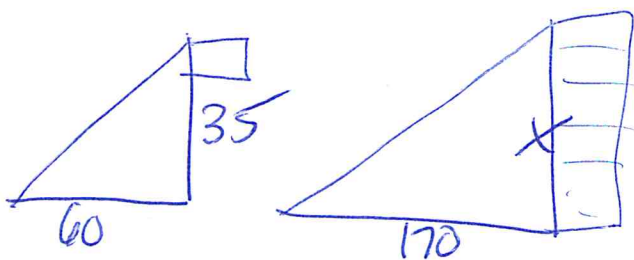
$$\frac{35}{x} = \frac{60}{170}$$

$$\frac{60x}{60} = \frac{5950}{60}$$

$$x = 99.16$$

$$x = 99 \text{ meters}$$

9. A flagpole casts a shadow 16.60 meters long. Tim stands at a distance of 12.45 meters from the base of the flagpole, such that the end of Tim's shadow meets the end of the flagpole's shadow. If Tim is 1.65 meters tall, determine and state the height of the flagpole to the *nearest tenth of a meter*.

$$\frac{16.6}{-12.45}$$
$$4.15$$

$$\frac{x}{1.65} = \frac{16.6}{4.15}$$

$$\frac{4.15x}{4.15} = \frac{27.39}{4.15}$$

$$x = 6.6$$
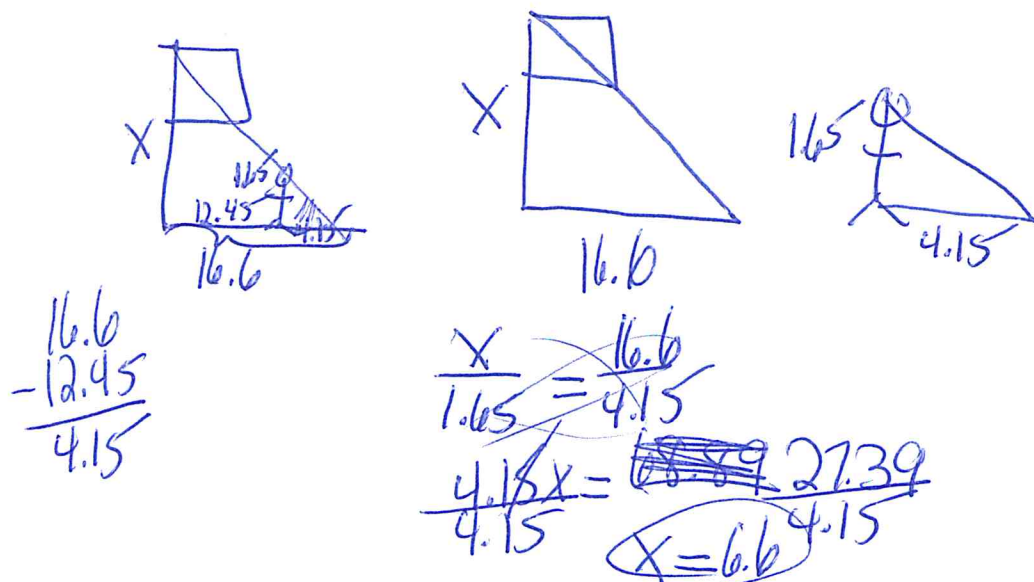
10. A 15 foot high building casts a 20 foot shadow. Jamal is standing 12 feet from the base of the building and the end of his shadow meets the end of the buildings shadow. How tall is Jamal?

$$\frac{20}{-12}$$
$$8$$

$$\frac{15}{x} = \frac{20}{8}$$

$$\frac{20x}{20} = \frac{120}{20}$$

$$x = 6$$