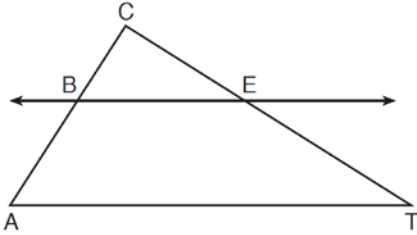


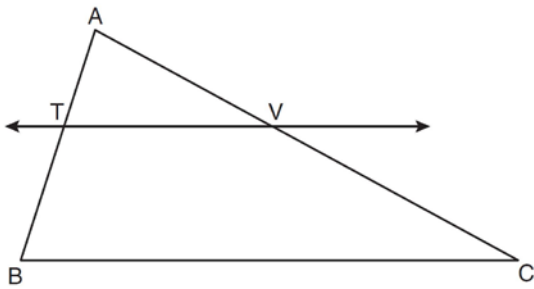
G.SRT.B.5: Side Splitter Theorem 2b

- 1 In the diagram below of $\triangle ACT$, $\overleftrightarrow{BE} \parallel \overline{AT}$.



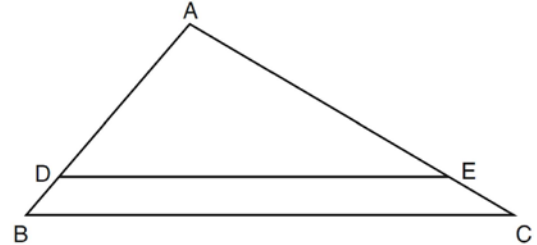
If $\overline{CB} = 3$, $\overline{CA} = 10$, and $\overline{CE} = 6$, what is the length of \overline{ET} ?

- 2 In the diagram below of $\triangle ABC$, $\overleftrightarrow{TV} \parallel \overline{BC}$, $\overline{AT} = 5$, $\overline{TB} = 7$, and $\overline{AV} = 10$.



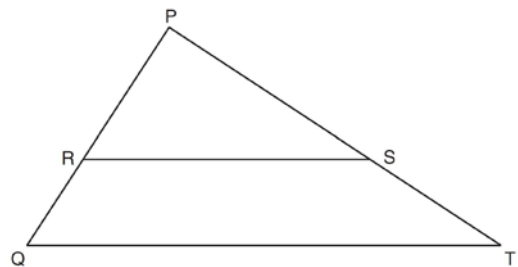
What is the length of \overline{VC} ?

- 3 In the diagram of $\triangle ABC$ shown below, $\overline{DE} \parallel \overline{BC}$.



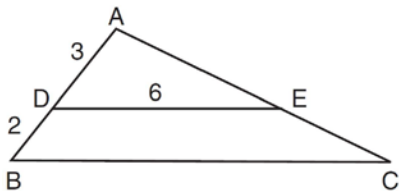
If $\overline{AB} = 10$, $\overline{AD} = 8$, and $\overline{AE} = 12$, what is the length of \overline{EC} ?

- 4 Triangle PQT with $\overline{RS} \parallel \overline{QT}$ is shown below.



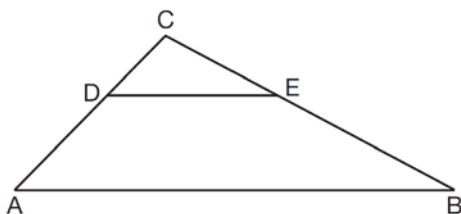
If $\overline{PR} = 12$, $\overline{RQ} = 8$, and $\overline{PS} = 21$, what is the length of \overline{PT} ?

- 5 In the diagram of $\triangle ABC$ below, $\overline{DE} \parallel \overline{BC}$, $AD = 3$, $DB = 2$, and $DE = 6$.



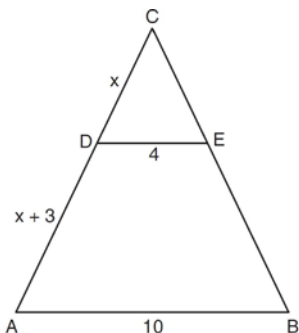
What is the length of \overline{BC} ?

- 6 In the diagram of $\triangle ABC$ below, $\overline{DE} \parallel \overline{AB}$.



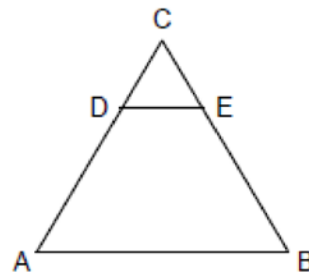
If $CD = 4$, $CA = 10$, $\overline{CE} = x + 2$, and $EB = 4x - 7$, what is the length of \overline{CE} ?

- 7 In the diagram below of $\triangle ABC$, \overline{CDA} , \overline{CEB} , $\overline{DE} \parallel \overline{AB}$, $DE = 4$, $AB = 10$, $CD = x$, and $DA = x + 3$.



What is the value of x ?

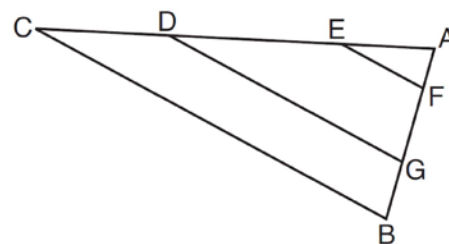
- 8 In the accompanying diagram of equilateral triangle ABC , $DE = 5$ and $\overline{DE} \parallel \overline{AB}$.



If AB is three times as long as DE , what is the perimeter of quadrilateral $ABED$?

- 9 In $\triangle ABC$, point D is on \overline{AB} , and point E is on \overline{BC} such that $\overline{DE} \parallel \overline{AC}$. If $DB = 2$, $DA = 7$, and $DE = 3$, what is the length of \overline{AC} ?

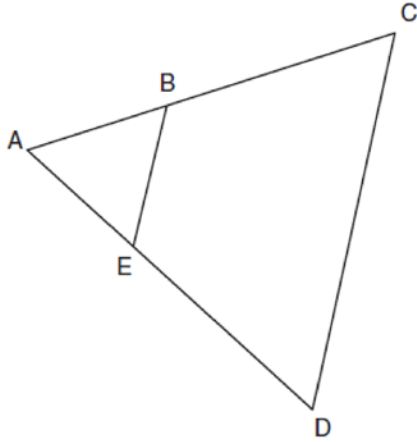
- 10 In the diagram below of $\triangle ABC$, with \overline{CDEA} and \overline{BGFA} , $\overline{EF} \parallel \overline{DG} \parallel \overline{CB}$.



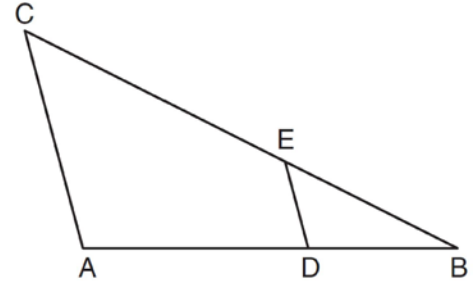
Which statement is *false*?

- 1) $\frac{AC}{AD} = \frac{AB}{AG}$
- 2) $\frac{AE}{AF} = \frac{AC}{AB}$
- 3) $\frac{AE}{AD} = \frac{EC}{AC}$
- 4) $\frac{BG}{BA} = \frac{CD}{CA}$

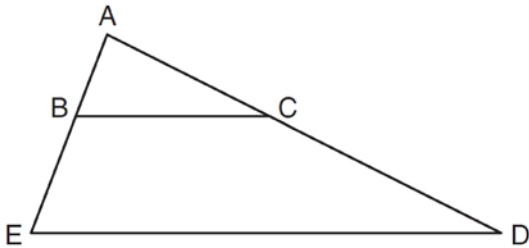
- 11 In the diagram below of $\triangle ACD$, E is a point on \overline{AD} and B is a point on \overline{AC} , such that $\overline{EB} \parallel \overline{DC}$. If $\overline{AE} = 3$, $\overline{ED} = 6$, and $\overline{DC} = 15$, find the length of \overline{EB} .



- 13 In the diagram below of $\triangle ABC$, D is a point on \overline{AB} , E is a point on \overline{BC} , $\overline{AC} \parallel \overline{DE}$, $\overline{CE} = 25$ inches, $\overline{AD} = 18$ inches, and $\overline{DB} = 12$ inches. Find, to the nearest tenth of an inch, the length of \overline{EB} .



- 12 In the diagram below of $\triangle ADE$, B is a point on \overline{AE} and C is a point on \overline{AD} such that $\overline{BC} \parallel \overline{ED}$, $\overline{AC} = x - 3$, $\overline{BE} = 20$, $\overline{AB} = 16$, and $\overline{AD} = 2x + 2$. Find the length of \overline{AC} .



G.SRT.B.5: Side Splitter Theorem 2b Answer Section

1 ANS:

14

$$\frac{3}{7} = \frac{6}{x}$$

$$3x = 42$$

$$x = 14$$

REF: 081027ge

2 ANS:

14

$$\frac{5}{7} = \frac{10}{x}$$

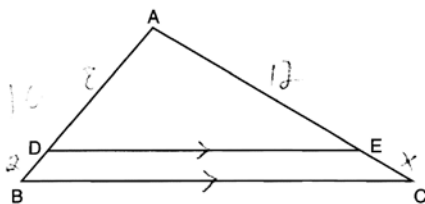
$$5x = 70$$

$$x = 14$$

REF: 081103ge

3 ANS:

3



$$\frac{8}{2} = \frac{12}{x}$$

$$8x = 24$$

$$x = 3$$

REF: 061216ge

4 ANS:

35

$$\frac{12}{8} = \frac{21}{x} \quad 21 + 14 = 35$$

$$12x = 168$$

$$x = 14$$

REF: 061426ge

5 ANS:

10

$$\frac{3}{6} = \frac{5}{x}$$

$$3x = 30$$

$$x = 10$$

REF: 081423ge

6 ANS:

6

$$\frac{4}{6} = \frac{x+2}{4x-7}$$

$$16x - 28 = 6x + 12$$

$$10x = 40$$

$$x = 4$$

REF: 011521ge

7 ANS:

6

$$\frac{x}{4} = \frac{x+x+3}{10}$$

$$10x = 8x + 12$$

$$2x = 12$$

$$x = 6$$

REF: 011626ge

8 ANS:

40

Because $\overline{DE} \parallel \overline{AB}$, $\triangle CDE$ is an equilateral triangle as well. If $DE = 5$, then $CD = 5$ and $CE = 5$, and $AD = 10$ and $BE = 10$. Since AB is three times as long as DE , $AB = 15$. $5 + 10 + 10 + 15 = 40$

REF: 089915a

9 ANS:

13.5

$$\triangle ABC \sim \triangle DBE. \quad \frac{\overline{AB}}{\overline{DB}} = \frac{\overline{AC}}{\overline{DE}}$$

$$\frac{9}{2} = \frac{x}{3}$$

$$x = 13.5$$

REF: 060927ge

10 ANS: 3

REF: 081507ge

11 ANS:

$$5. \frac{3}{x} = \frac{6+3}{15}$$

$$9x = 45$$

$$x = 5$$

REF: 011033ge

12 ANS:

$$32. \quad \frac{16}{20} = \frac{x-3}{x+5} \quad . \quad \overline{AC} = x - 3 = 35 - 3 = 32$$

$$16x + 80 = 20x - 60$$

$$140 = 4x$$

$$35 = x$$

REF: 011137ge

13 ANS:

$$16.7. \quad \frac{x}{25} = \frac{12}{18}$$

$$18x = 300$$

$$x \approx 16.7$$

REF: 061133ge