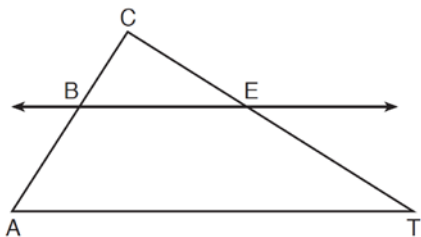


G.SRT.B.4: Side Splitter Theorem 3

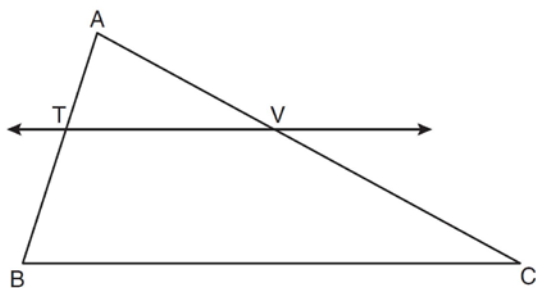
- 1 In the diagram below of $\triangle ACT$, $\overleftrightarrow{BE} \parallel \overleftrightarrow{AT}$.



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

- 1) 5
- 2) 14
- 3) 20
- 4) 26

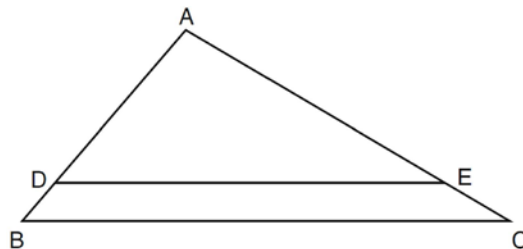
- 2 In the diagram below of $\triangle ABC$, $\overleftrightarrow{TV} \parallel \overleftrightarrow{BC}$, $AT = 5$, $TB = 7$, and $AV = 10$.



What is the length of $\overline{VC}$?

- 1) $3\frac{1}{2}$
- 2) $7\frac{1}{7}$
- 3) 14
- 4) 24

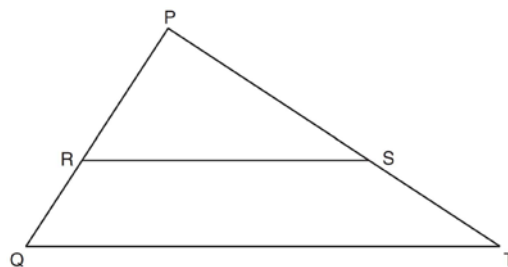
- 3 In the diagram of $\triangle ABC$ shown below, $\overline{DE} \parallel \overline{BC}$.



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

- 1) 6
- 2) 2
- 3) 3
- 4) 15

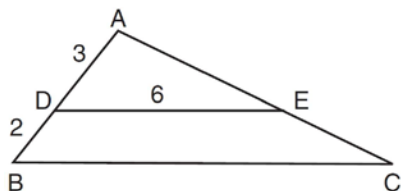
- 4 Triangle PQT with $\overline{RS} \parallel \overline{QT}$ is shown below.



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

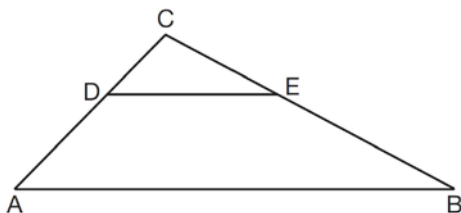
- 1) 14
- 2) 17
- 3) 35
- 4) 38

- 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 $\overline{BC}$?

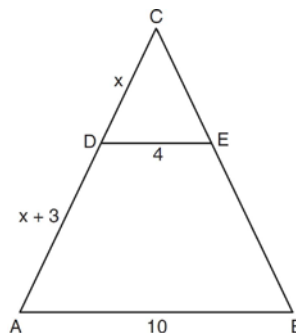
- 1) 12
 - 2) 10
 - 3) 8
 - 4) 4
- 6 In the diagram of $\triangle ABC$ below, $\overline{DE} \parallel \overline{AB}$.



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

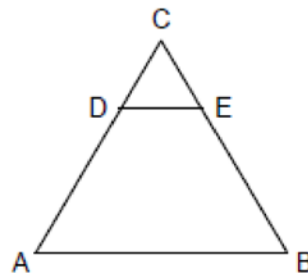
- 1) 10
- 2) 8
- 3) 6
- 4) 4

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



What is the value of x ?

- 1) 0.5
 - 2) 2
 - 3) 5.5
 - 4) 6
- 8 In the accompanying diagram of equilateral triangle ABC , $DE = 5$ and $\overline{DE} \parallel \overline{AB}$.



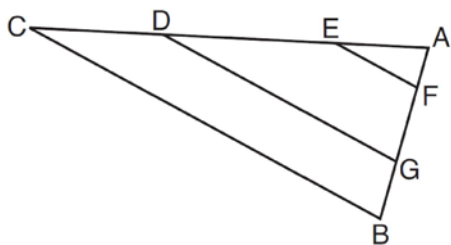
If AB is three times as long as DE , what is the perimeter of quadrilateral $ABED$?

- 1) 20
- 2) 30
- 3) 35
- 4) 40

- 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 $\overline{AC}$?

- 1) 8
- 2) 9
- 3) 10.5
- 4) 13.5

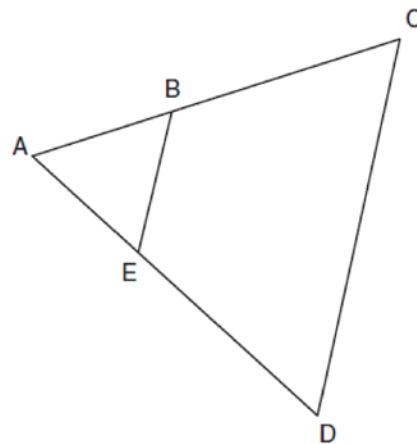
- 10 In the diagram below of $\triangle ABC$, with $\overline{CDEA}$ and $\overline{BGFA}$, $\overline{EF} \parallel \overline{DG} \parallel \overline{CB}$.



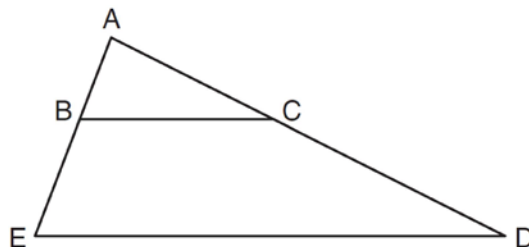
Which statement is *false*?

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

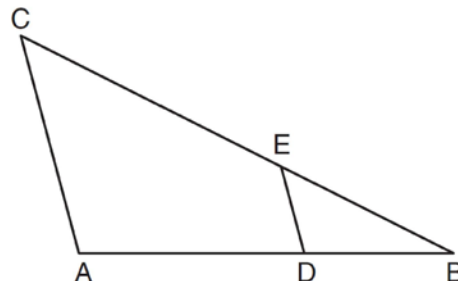
- 11 In the diagram below of $\triangle ACD$, E is a point on $\overline{AD}$ and B is a point on $\overline{AC}$, such that $\overline{EB} \parallel \overline{DC}$. If $\overline{AE} = 3$, $\overline{ED} = 6$, and $\overline{DC} = 15$, find the length of $\overline{EB}$.



- 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 $\overline{BC} \parallel \overline{ED}$, $AC = x - 3$, $BE = 20$, $AB = 16$, and $AD = 2x + 2$. Find the length of $\overline{AC}$.



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



G.SRT.B.4: Side Splitter Theorem 3**Answer Section**

1 ANS: 2

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

$$3x = 42$$

$$x = 14$$

REF: 081027ge

2 ANS: 3

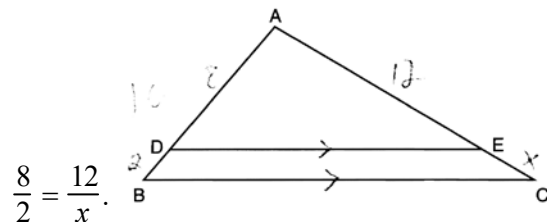
$$\frac{5}{7} = \frac{10}{x}$$

$$5x = 70$$

$$x = 14$$

REF: 081103ge

3 ANS: 3



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

$$8x = 24$$

$$x = 3$$

REF: 061216ge

4 ANS: 3

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

$$12x = 168$$

$$x = 14$$

REF: 061426ge

5 ANS: 2

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

$$3x = 30$$

$$x = 10$$

REF: 081423ge

6 ANS: 3

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

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

$$10x = 40$$

$$x = 4$$

REF: 011521ge

7 ANS: 4

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

$$10x = 8x + 12$$

$$2x = 12$$

$$x = 6$$

REF: 011626ge

8 ANS: 4

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: 4

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

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

$$x = 13.5$$

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