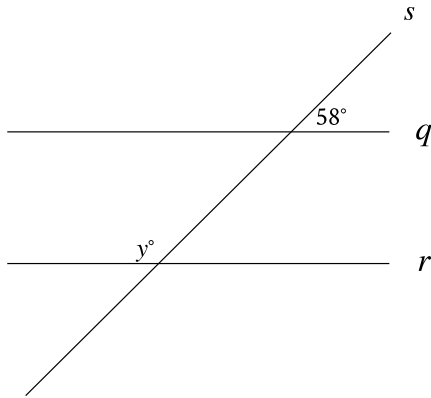


#1

ID: 686b5212

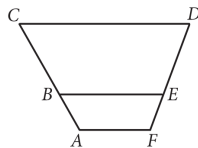


Note: Figure not drawn to scale.

In the figure, line q is parallel to line r , and both lines are intersected by line s . If $y = 2x + 8$, what is the value of x ?

#2

ID: 81b664bc



In the figure above, $\overline{AF}$, $\overline{BE}$, and $\overline{CD}$ are parallel. Points B and E lie on $\overline{AC}$ and $\overline{FD}$, respectively. If $AB = 9$, $BC = 18.5$, and $FE = 8.5$, what is the length of $\overline{ED}$, to the nearest tenth?

- A) 16.8
- B) 17.5
- C) 18.4
- D) 19.6

#3

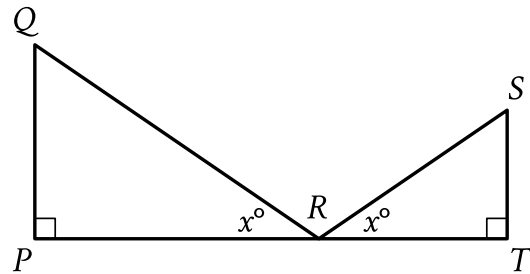
ID: 94364a79

Two nearby trees are perpendicular to the ground, which is flat. One of these trees is 10 feet tall and has a shadow that is 5 feet long. At the same time, the shadow of the other tree is 2 feet long. How tall, in feet, is the other tree?

- A) 3
- B) 4
- C) 8
- D) 27

#4

ID: 51f26ce8



Note: Figure not drawn to scale.

$\triangle QPR$ is similar to $\triangle STR$. The lengths represented by $\overline{ST}$, $\overline{QP}$, $\overline{PR}$, and $\overline{QR}$ in the figure are 14, 15, 20, and 25, respectively. What is the length of $\overline{SR}$?

- A) $\frac{350}{15}$
- B) $\frac{350}{20}$
- C) $\frac{210}{20}$
- D) $\frac{210}{25}$

#5

ID: 055aafe7

Triangle ABC is similar to triangle XYZ , where A , B , and C correspond to X , Y , and Z , respectively. In triangle ABC , the length of $\overline{AB}$ is 170 and the length of $\overline{BC}$ is 850. In triangle XYZ , the length of $\overline{YZ}$ is 60. What is the length of $\overline{XY}$?

- A) 204
- B) 182
- C) 60
- D) 12

#6

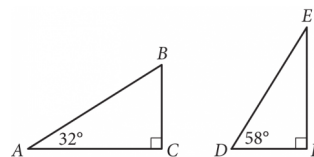
ID: d7a8aa9c

Each side of equilateral triangle S is multiplied by a scale factor of k to create equilateral triangle T . The length of each side of triangle T is greater than the length of each side of triangle S . Which of the following could be the value of k ?

- A) $\frac{29}{28}$
- B) 1
- C) $\frac{28}{29}$
- D) 0

#7

ID: 933fee1a



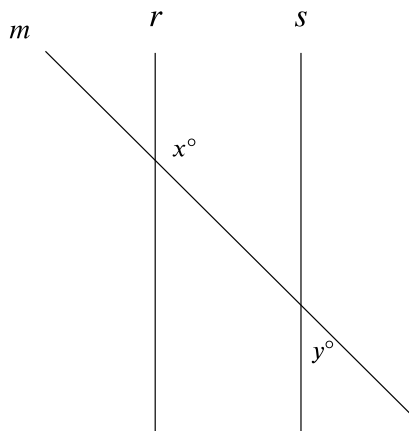
Triangles ABC and DEF are shown above. Which of the

following is equal to the ratio $\frac{BC}{AB}$?

- A) $\frac{DE}{DF}$
- B) $\frac{DF}{DE}$
- C) $\frac{DF}{EF}$
- D) $\frac{EF}{DE}$

#8

ID: a4c05a1b



Note: Figure not drawn to scale.

In the figure shown, lines r and s are parallel, and line m intersects both lines. If $y < 65$, which of the following must be true?

- A) $x < 115$
- B) $x > 115$
- C) $x + y < 180$
- D) $x + y > 180$

#9

ID: d3fe472f

Triangle ABC is similar to triangle XYZ , such that A , B , and C correspond to X , Y , and Z respectively. The length of each side of triangle XYZ is 2 times the length of its corresponding side in triangle ABC . The measure of side AB is 16. What is the measure of side XY ?

- A) 14
- B) 16
- C) 18
- D) 32

#10

ID: fd8745fc

In triangle JKL , the measures of $\angle K$ and $\angle L$ are each 48° . What is the measure of $\angle J$, in degrees? (Disregard the degree symbol when entering your answer.)

#11

ID: c7bed21d

Quadrilateral $P'Q'R'S'$ is similar to quadrilateral $PQRS$, where P , Q , R , and S correspond to P' , Q' , R' , and S' , respectively. The measure of angle P is 30° , the measure of angle Q is 50° , and the measure of angle R is 70° . The length of each side of $P'Q'R'S'$ is 3 times the length of each corresponding side of $PQRS$. What is the measure of angle P' ?

- A) 10°
- B) 30°
- C) 40°
- D) 90°

#12

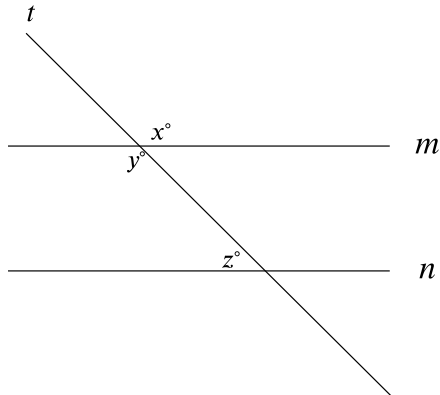
ID: 901e3285

In triangle ABC , the measure of angle A is 50° . If triangle ABC is isosceles, which of the following is NOT a possible measure of angle B ?

- A) 50°
- B) 65°
- C) 80°
- D) 100°

#13

ID: 2adbf1b1



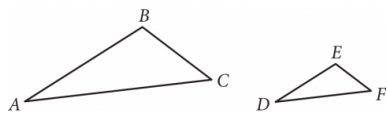
Note: Figure not drawn to scale.

In the figure, lines m and n are parallel. If $x = 6k + 13$ and $y = 8k - 29$, what is the value of z ?

- A) 3
- B) 21
- C) 41
- D) 139

#14

ID: 1c3d613c

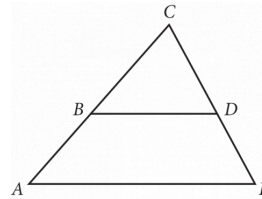


Note: Figures not drawn to scale.

Triangle ABC and triangle DEF are shown. The relationship between the side lengths of the two triangles is $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF} = 3$ such that $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF} = 3$. If the measure of angle BAC is 20° , what is the measure, in degrees, of angle EDF ? (Disregard the degree symbol when gridding your answer.)

#15

ID: 6dd463ca



Note: Figure not drawn to scale.

In the figure above, segments AE and BD are parallel. If angle BDC measures 58° and angle ACE measures 62° , what is the measure of angle CAE ?

- A) 58°
- B) 60°
- C) 62°
- D) 120°

#16

ID: 4ff7b652

Right triangles LMN and PQR are similar, where L and M correspond to P and Q , respectively. Angle M has a measure of 53° . What is the measure of angle Q ?

- A) 37°
- B) 53°
- C) 127°
- D) 143°

#17

ID: 95ca2683

In triangle ABC , the measure of angle A is 54° , the measure of angle B is 90° , and the measure of angle C is $(\frac{k}{2})^\circ$. What is the value of k ?

- A) 36
- B) 45
- C) 72
- D) 108