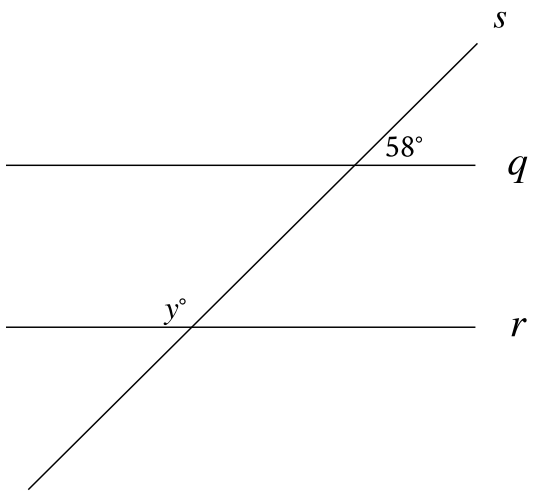
#1

ID: 686b5212

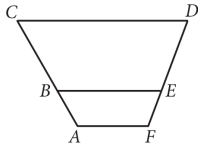


Note: Figure not drawn to scale.

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?

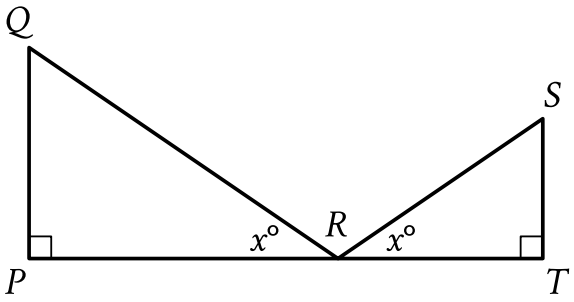
A) 3

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 $\bar{ST}$, $\bar{QP}$, $\bar{PR}$, and $\bar{QR}$ in the figure are 14, 15, 20, and 25, respectively. What is the length of $\bar{SR}$?

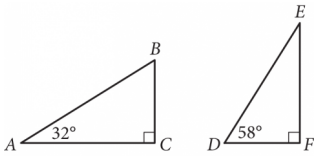
A) $\frac{350}{15}$

B) $\frac{350}{20}$

C) $\frac{210}{20}$

D) $\frac{210}{25}$

#5 ID: 933fee1a



Triangles ABC and DEF are shown above.

Which of the following is equal to the ratio $B\frac{C}{A}B$?

A) $D\frac{E}{D}F$

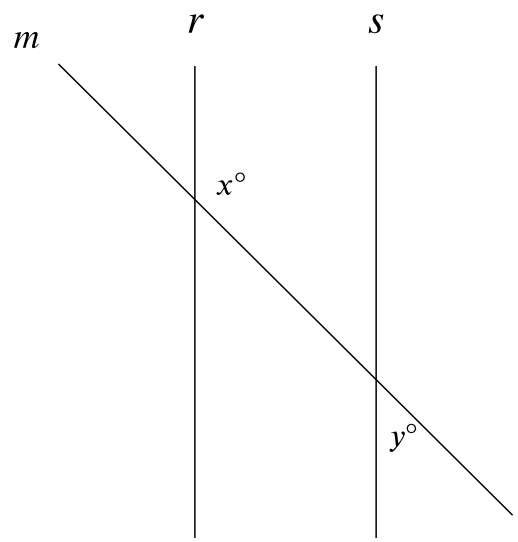
B) $D\frac{E}{D}E$

C) $D\frac{F}{E}F$

D) $E\frac{F}{D}E$

#6

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) $x + y > 180$

#7

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

#8

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.)

#9

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) $90°$

#10

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) $50°$

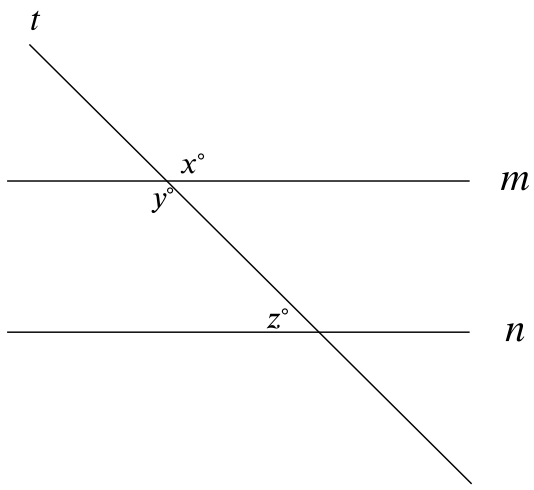
B) $65°$

C) $80°$

D) $100°$

#11

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

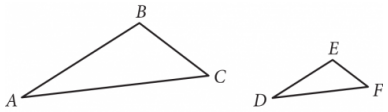
B) 21

C) 41

D) 139

#12

ID: 1c3d613c

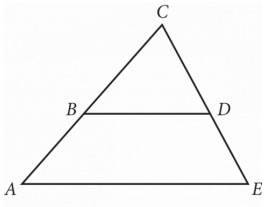


Note: Figures not drawn to scale.

Triangle ABC and triangle DEF are shown. The relationship between the side lengths of the two triangles is 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.)

#13

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°

#14

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) $143°$