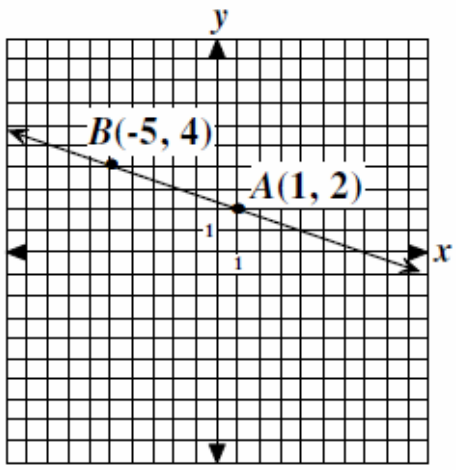
Geometry Quick Quiz

September 19,2019

1

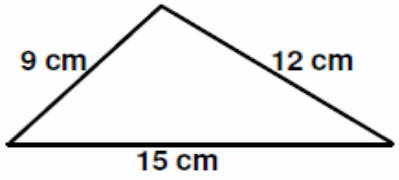
Which equation describes the line through points *A* and *B*?



A $x-3y=-5$
B $x+3y=-5$
C $x+3y=7$
D $3x+y=5$

2

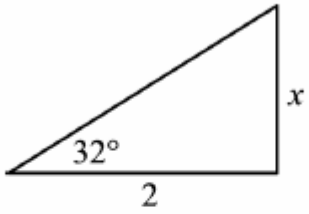
What is the area of a right triangle with legs of length 9 cm and 12 cm and a hypotenuse of length 15 cm?



A 36 square cm
B 54 square cm
C 90 square cm
D 108 square cm

3.

Which number is closest to the value of x in the figure below?



sin 32° = 0.530
cos 32° = 0.848
tan 32° = 0.625

A 0.424
B 1.060
C 1.250
D 1.378

4.

A sector of a circle is created from a central angle with a measure of 60°. If the diameter of the circle is 6 inches, what is the area of the sector?

A 1.5π in.^{2}
B 2π in.^{2}
C 6π in.^{2}
D 8π in.^{2}

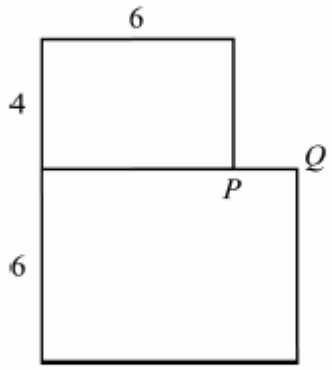
5.

If $\overline{CD}$ intersects $\overline{AB}$ at point K and $\overline{CD}$ is the perpendicular bisector of $\overline{AB}$, which statement must be true?

A $\overline{CK} = \overline{KD}$
B $\overline{AB} = \overline{CD}$
C $\overline{AC} = \overline{BC}$
D $\overline{AC} = \overline{AD}$

6.

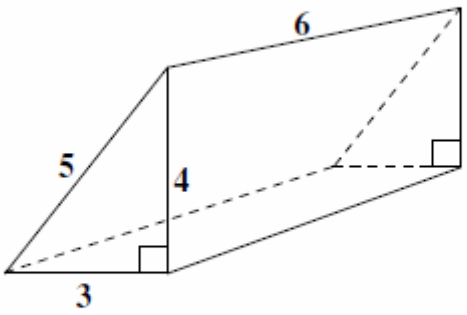
The figure below shows two similar rectangles. What is the length of $\overline{PQ}$?



A 2
B 3
C 4
D 5

7.

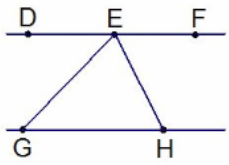
In the figure below, the two triangular faces of the prism are right triangles with sides of length 3, 4, and 5. The other three faces are rectangles. What is the surface area of the prism?



A 72
B 84
C 96
D 108

8.

What is the measure of $\angle GEH$ where E lies on $\overleftrightarrow{DF}$, $\angle DEG = 50°$, and $\overline{EH}$ bisects $\angle FEG$?



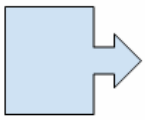
9.

A student has given the following definition of perpendicular lines, find and fix the error with an explanation:

Two lines that never intersect are known as perpendicular lines. Since lines continue in both directions for an infinite length, they will never intersect.

10.

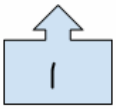
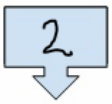
Fill in the table by matching the shape with the correct transformation of the shape below:



1 is a . . . . . .

2 is a . . . . . .

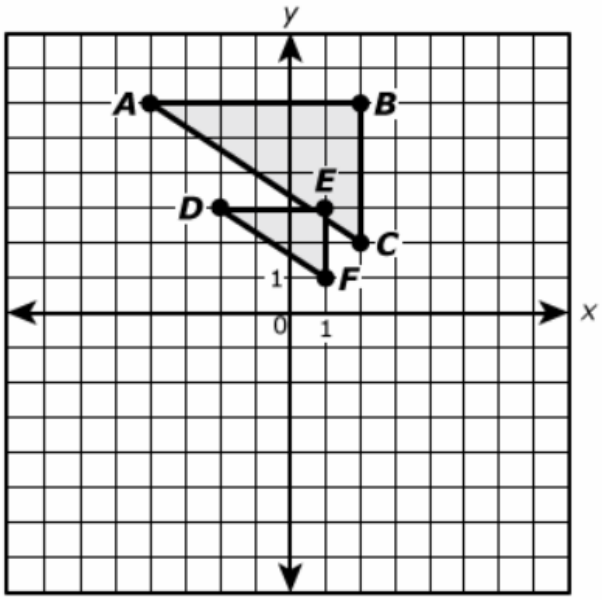
3 is a . . . . . .

	Dilation	Rotation 90° counterclockwise	Rotation 90° clockwise
	○	○	○
	○	○	○
	○	○	○

BONUS

11.

In the coordinate plane shown, ΔABC has vertices $A(-4, 6)$, $B(2, 6)$, and $C(2, 2)$.



What is the scale factor and the center of dilation that will carry ΔABC onto ΔDEF ?

Enter your answers in the boxes to complete the sentence.

The scale factor is ☐ and the center of dilation is at (☐ , ☐).

Converse, Inverse, Contrapositive

Given an if-then statement "if p, then q," we can create three related statements:

A conditional statement consists of two parts, a hypothesis in the "if" clause and a conclusion in the "then" clause. For instance, "If it rains, then they cancel school."
"It rains" is the hypothesis.
"They cancel school" is the conclusion.

To form the converse of the conditional statement, interchange the hypothesis and the conclusion.
The converse of *"If it rains, then they cancel school"* is *"If they cancel school, then it rains."*

To form the inverse of the conditional statement, take the negation of both the hypothesis and the conclusion.
The inverse of *"If it rains, then they cancel school"* is *"If it does not rain, then they do not cancel school."*

To form the contrapositive of the conditional statement, interchange the hypothesis and the conclusion of the inverse statement.
The contrapositive of *"If it rains, then they cancel school"* is *"If they do not cancel school, then it does not rain."*

Statement	If p, then q.
Converse	If q, then p.
Inverse	If not p, then not q.
Contrapositive	If not q, then not p.

Taken from:

https://www.varsitytutors.com/hotmath/hotmath_help/topics/converse-inverse-contrapositive