Geometry
Daily Quiz 12052019

Question 1.

Quadrilateral $ABCD$ undergoes a transformation, producing quadrilateral $A'B'C'D'$. For which transformation would the area of $A'B'C'D'$ *not* be equal to the area of $ABCD$?

(1) a rotation of 90° about the origin

(2) a reflection over the y-axis

(3) a dilation by a scale factor of 2

(4) a translation defined by $(x,y) \rightarrow (x + 4, y - 1)$

Question 2.

The diameter of a sphere is 12 inches. What is the volume of the sphere to the *nearest cubic inch*?

(1) 288

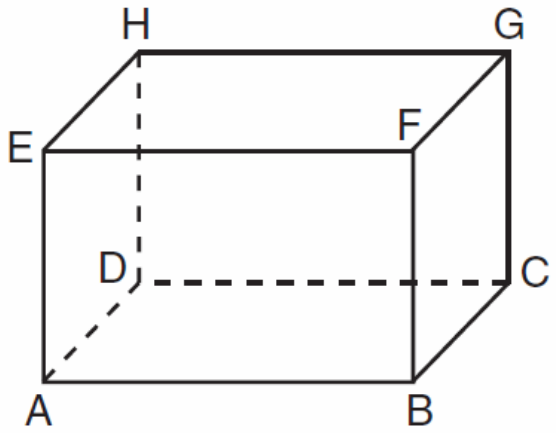
(2) 452

(3) 905

(4) 7,238

Question 3.

A right rectangular prism is shown in the diagram below.



Which line segments are coplanar?

(1) $\overline{EF}$ and $\overline{BC}$

(2) $\overline{HD}$ and $\overline{FG}$

(3) $\overline{GH}$ and $\overline{FB}$

(4) $\overline{EA}$ and $\overline{GC}$

Question 4.

What are the coordinates of the image of point $A(2,-7)$ under the translation $(x,y) \rightarrow (x-3, y+5)$?

(1) $(-1,-2)$

(2) $(-1,2)$

(3) $(5,-12)$

(4) $(5,12)$

Question 5.

Point M is the midpoint of $\overline{AB}$. If the coordinates of M are (2,8) and the coordinates of A are (10,12), what are the coordinates of B?

(1) (6,10)

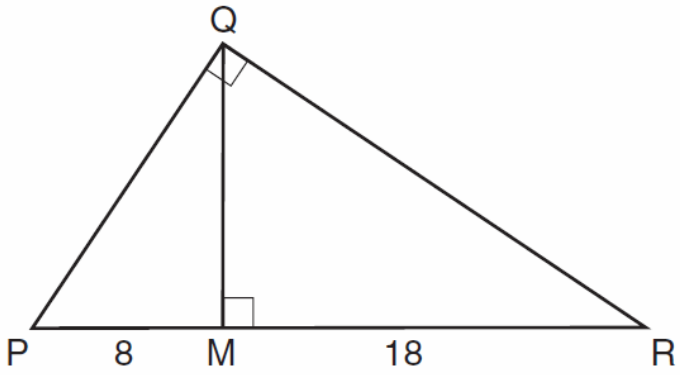
(2) (−6,4)

(3) (−8,−4)

(4) (18,16)

Question 6.

In the diagram below, $\overline{QM}$ is an altitude of right triangle PQR, $PM = 8$, and $RM = 18$.



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

(1) 20

(2) 16

(3) 12

(4) 10

Question 7.

What is an equation of the line that passes through the point (2,4) and is perpendicular to the line whose equation is $3y = 6x + 3$?

(1) $y = -\frac{1}{2}x + 5$

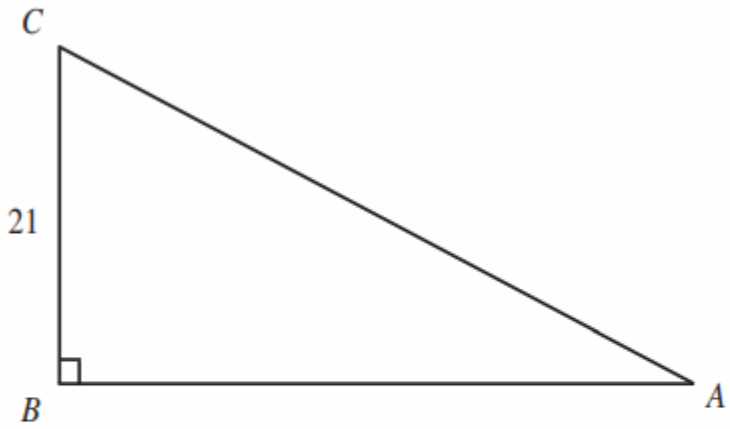
(2) $y = -\frac{1}{2}x + 4$

(3) $y = 2x - 6$

(4) $y = 2x$

Question 8.

In the figure below, $\sin A = 0.7$.



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

A 14.7

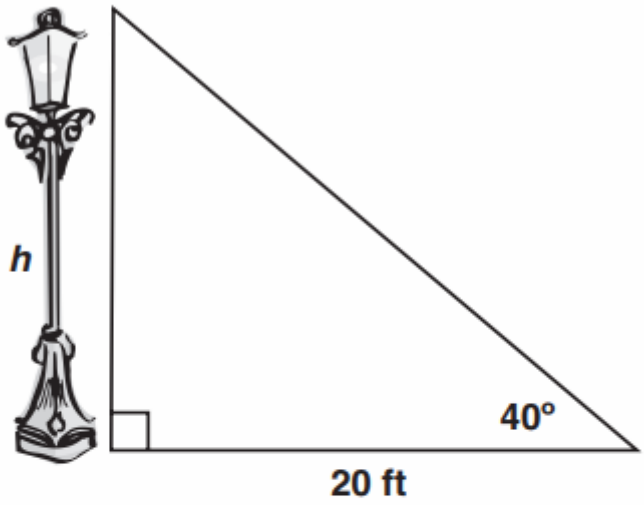
B 21.7

C 30

D 32

Question 9.

Approximately how many feet tall is the streetlight?



$\sin 40° \approx 0.64$
$\cos 40° \approx 0.77$
$\tan 40° \approx 0.84$

A 12.8

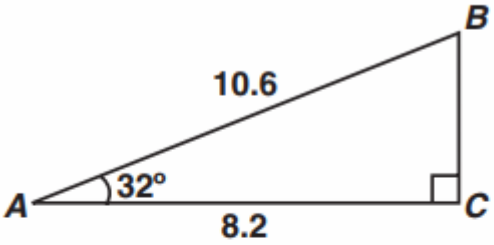
B 15.4

C 16.8

D 23.8

Question 10.

Right triangle ABC is pictured below.



Which equation gives the correct value for BC?

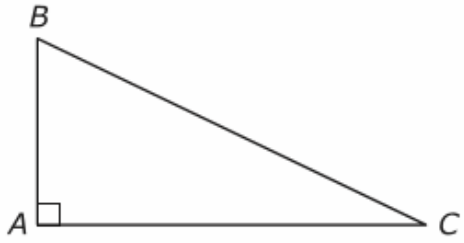
A $\sin 32° = \frac{BC}{8.2}$

B $\cos 32° = \frac{BC}{10.6}$

C $\tan 58° = \frac{8.2}{BC}$

D $\sin 58° = \frac{BC}{10.6}$

Bonus.



In right triangle ABC, $m\angle B \neq m\angle C$. Let $\sin B = r$ and $\cos B = s$. What is $\sin C - \cos C$?

You must show your working to get your points for this problem.

PARCC
Partnership for Assessment of Readiness for College and Careers

High School Mathematics Assessment Reference Sheet

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilograms
1 kilogram = 2.2 pounds
1 ton = 2000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallons
1 liter = 1000 cubic centimeters

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d \ \ or \ \ C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Arithmetic Sequence	$a_n = a_1 + (n-1)d$
Geometric Sequence	$a_n = a_1 r^{n-1}$
Geometric Series	$S_n = \frac{a_1 - a_1 r^n}{1-r}$ where $r \neq 1$
Radians	1 radian $= \frac{180}{\pi}$ degrees
Degrees	1 degree $= \frac{\pi}{180}$ radians

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