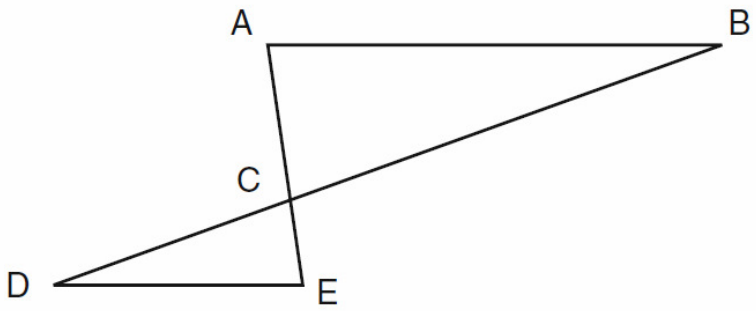
Geometry
Daily Quiz 10152019
This may be an easy 100!

Question 1.

In the diagram of $\triangle ABC$ and $\triangle EDC$ below, $\overline{AE}$ and $\overline{BD}$ intersect at C, and $\angle CAB \cong \angle CED$.

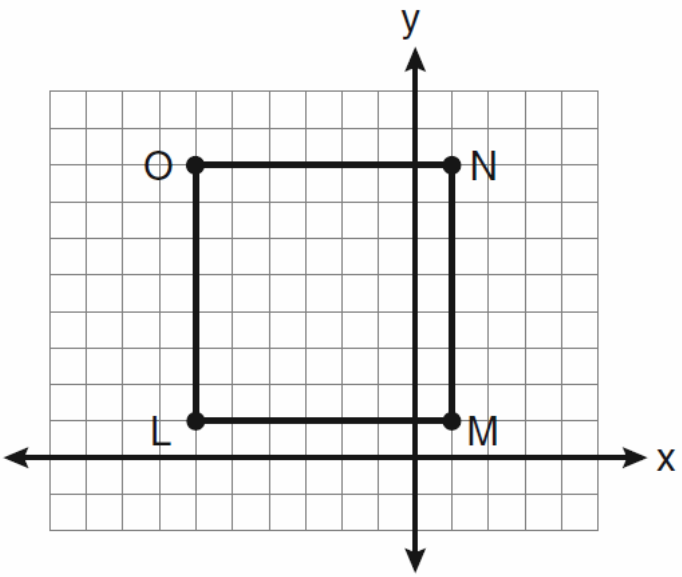


Which method can be used to show that $\triangle ABC$ must be similar to $\triangle EDC$?

(1) SAS
(2) AA
(3) SSS
(4) HL

Question 2.

Square $LMNO$ is shown in the diagram below.



What are the coordinates of the midpoint of diagonal $\overline{LN}$?

(1) $\left(4\frac{1}{2}, -2\frac{1}{2}\right)$

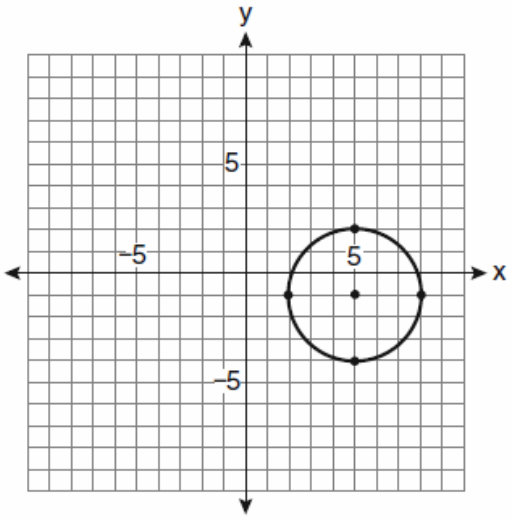
(2) $\left(-3\frac{1}{2}, 3\frac{1}{2}\right)$

(3) $\left(-2\frac{1}{2}, 3\frac{1}{2}\right)$

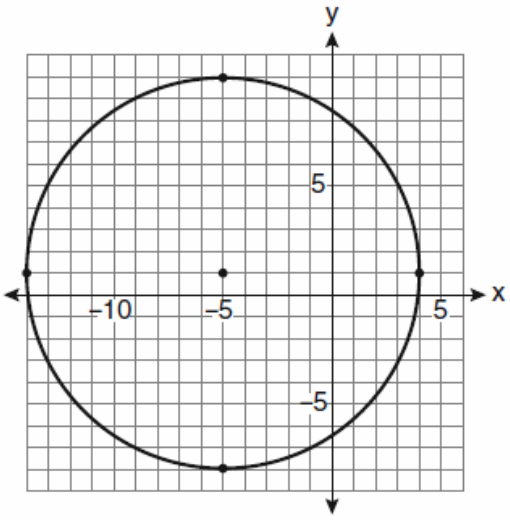
(4) $\left(-2\frac{1}{2}, 4\frac{1}{2}\right)$

Question 3.

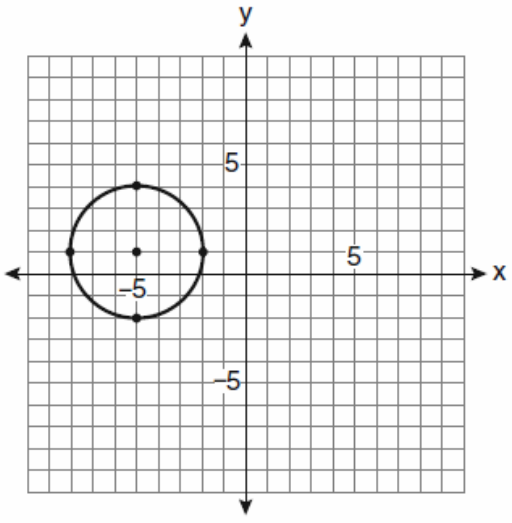
Which graph represents a circle with the equation $(x - 5)^2 + (y + 1)^2 = 9$?



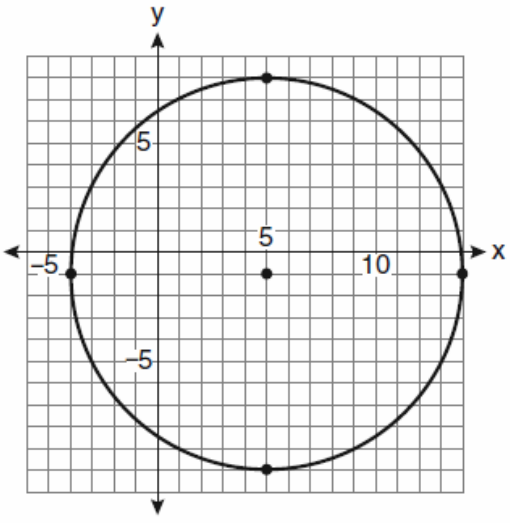
(1)



(3)



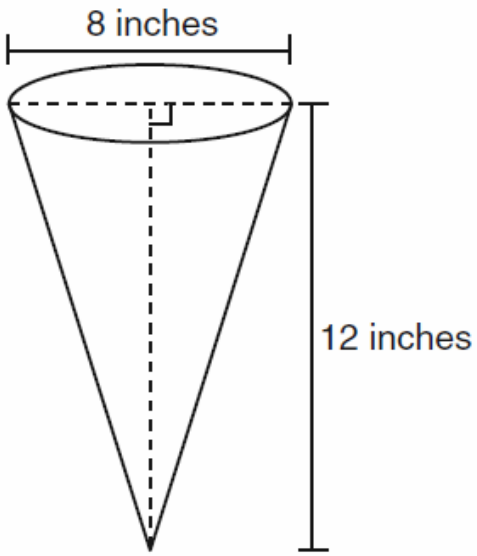
(2)



(4)

Question 4.

In the diagram below, a right circular cone has a diameter of 8 inches and a height of 12 inches.



What is the volume of the cone to the *nearest cubic inch*?

(1) 201

(2) 481

(3) 603

(4) 804

Question 5.

A circle is represented by the equation $x^2 + (y + 3)^2 = 13$. What are the coordinates of the center of the circle and the length of the radius?

(1) (0,3) and 13

(2) (0,3) and $\sqrt{13}$

(3) (0,−3) and 13

(4) (0,−3) and $\sqrt{13}$

Question 6.

Given the system of equations:

$$y = x^2 - 4x$$
$$x = 4$$

The number of points of intersection is

(1) 1

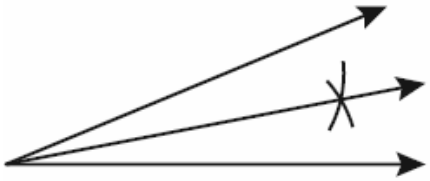
(2) 2

(3) 3

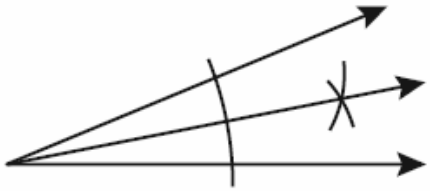
(4) 0

Question 7.

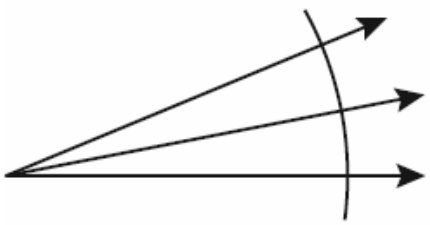
Which illustration shows the correct construction of an angle bisector?



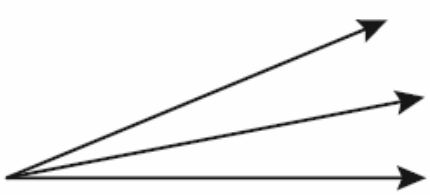
(1)



(3)



(2)



(4)

Question 8.

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

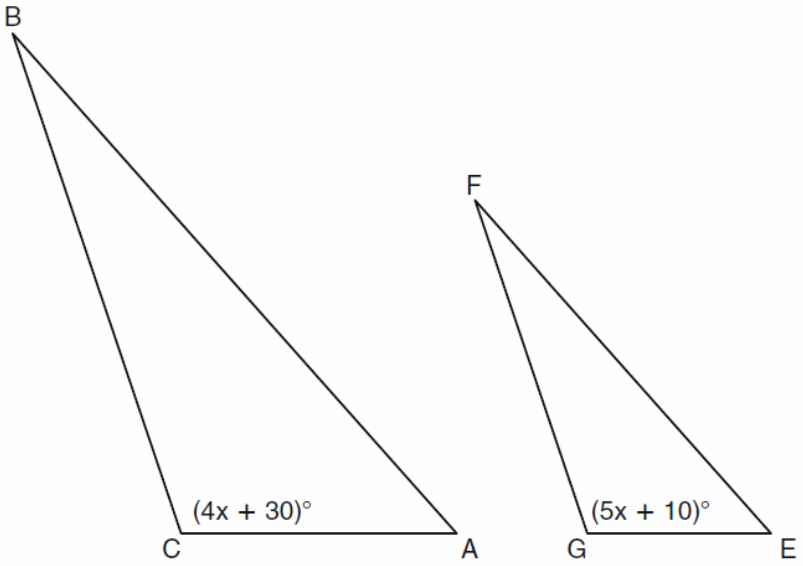
(2) 9

(3) 10.5

(4) 13.5

Question 9.

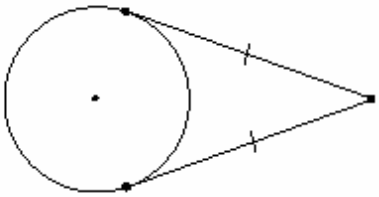
In the diagram below, $\triangle ABC \sim \triangle EFG$, $m\angle C = 4x + 30$, and $m\angle G = 5x + 10$. Determine the value of x.



Question 10. (I love this question.)

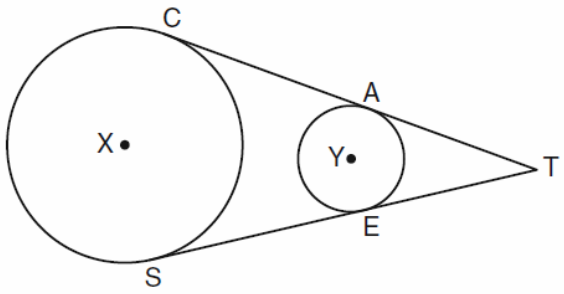
Tangents from an External Point

Tangent segments from a common point external to a circle have the same length.



Use the theorem above to answer the question below.

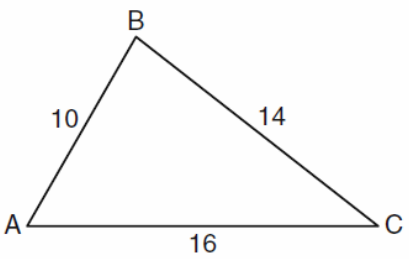
In the diagram below, circles X and Y have two tangents drawn to them from external point T. The points of tangency are C, A, S, and E. The ratio of TA to AC is 1:3. If $TS = 24$, find the length of $\overline{SE}$.



(Not drawn to scale)

Bonus Question.

In the diagram of $\triangle ABC$ below, $AB = 10$, $BC = 14$, and $AC = 16$. Find the perimeter of the triangle formed by connecting the midpoints of the sides of $\triangle ABC$.



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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