

Example Items

Geometry Pre-AP

Geometry Pre-AP Example Items are a **representative set** of items for the ACP. Teachers may use this set of items along with the test blueprint as guides to prepare students for the ACP. On the last page, the correct answer, content SE and SE justification are listed for each item.

*The specific part of an SE that an Example Item measures is **NOT** necessarily the only part of the SE that is assessed on the ACP.* None of these Example Items will appear on the ACP.

Teachers may provide feedback regarding Example Items.

(1) Download the [Example Feedback Form](#) and email it. The form is located on the homepage of the Assessment website (assessment.dallasisd.org).

OR

(2) To submit directly: Login to the [Assessment website](#). Under “News” in the left-hand column, click on “Sem 2 Example Items Download.” Above the subjects, click on “Example Feedback Form.”

Second Semester

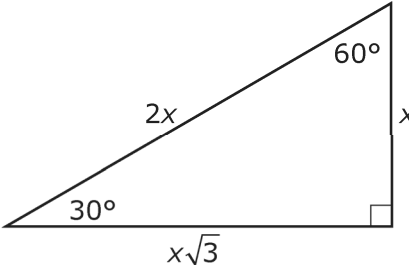
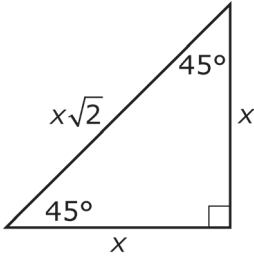
2017–2018

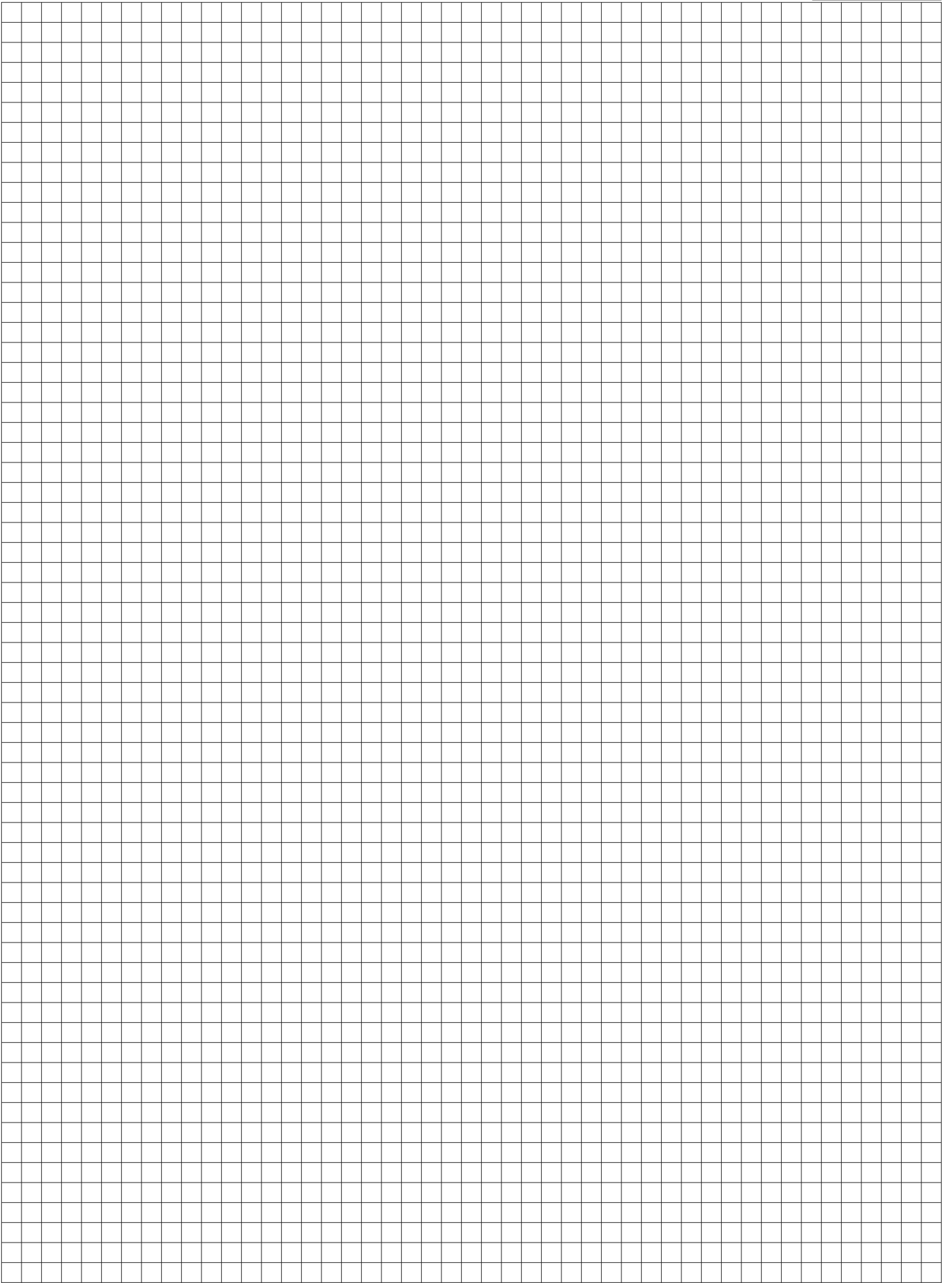
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ACP Formulas
Geometry/Geometry PAP
2017-2018

Perimeter and Circumference			
Square:	$P = 4s$	Rectangle:	$P = 2\ell + 2w$
Circle:	$C = 2\pi r$	$C = \pi d$	Arc Length: $\ell = \frac{x}{360^\circ} \cdot 2\pi r$
Area			
Square:	$A = s^2$	Triangle:	$A = \frac{1}{2}bh$
Rectangle:	$A = \ell w$	$A = bh$	Regular Polygon: $A = \frac{1}{2}aP$
Parallelogram:	$A = bh$	Circle:	$A = \pi r^2$
Rhombus:	$A = \frac{1}{2}d_1d_2$	$A = bh$	Sector of a Circle: $A = \frac{x}{360^\circ} \cdot \pi r^2$
Trapezoid:	$A = \frac{1}{2}(b_1 + b_2)h$		
Lateral Surface Area			
Prism:	$L = Ph$	Pyramid:	$L = \frac{1}{2}P\ell$
Cylinder:	$L = 2\pi rh$	Cone:	$L = \pi r\ell$
Total Surface Area			
Prism:	$S = Ph + 2B$	Pyramid:	$S = \frac{1}{2}P\ell + B$
Cylinder:	$S = 2\pi rh + 2\pi r^2$	Cone:	$S = \pi r\ell + \pi r^2$
Sphere:	$S = 4\pi r^2$	Area of a Sector:	$A = \frac{x}{360^\circ} \cdot \pi r^2$
Volume			
Rectangular Prism:	$V = \ell wh$	Cube:	$V = s^3$
Prism:	$V = Bh$	Pyramid:	$V = \frac{1}{3}Bh$
Cylinder:	$V = \pi r^2 h$	$V = Bh$	Cone: $V = \frac{1}{3}Bh$ $V = \frac{1}{3}\pi r^2 h$
Sphere:	$V = \frac{4}{3}\pi r^3$		
Polygons			
Interior Angle Sum:	$S = 180(n - 2)$	Measure of Exterior Angle:	$\frac{360^\circ}{n}$

ACP Formulas
Geometry/Geometry PAP
2017-2018

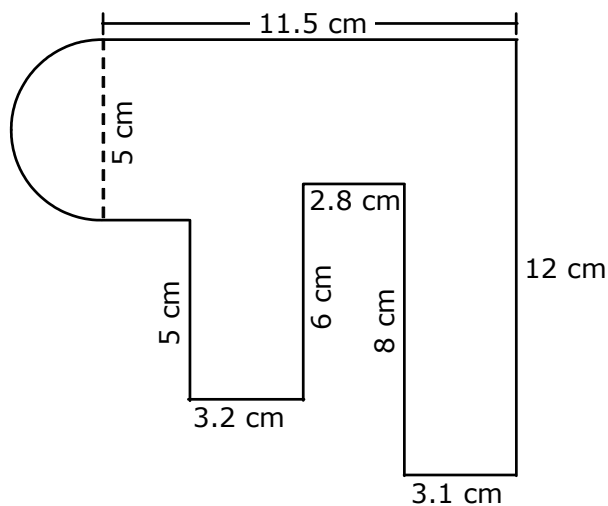
Coordinate Geometry	
Midpoint:	$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
Distance:	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Slope of a Line:	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Slope-Intercept Form of a Line:	$y = mx + b$
Point-Slope Form of a Line:	$y - y_1 = m(x - x_1)$
Standard Form of a Line:	$Ax + By = C$
Equation of a Circle:	$(x - h)^2 + (y - k)^2 = r^2$
Trigonometry	
Pythagorean Theorem:	$a^2 + b^2 = c^2$
Trigonometric Ratios:	$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$ $\cos A = \frac{\text{adjacent leg}}{\text{hypotenuse}}$ $\tan A = \frac{\text{opposite leg}}{\text{adjacent leg}}$
Special Right Triangles:	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>30° - 60° - 90°</p>  <p>A right-angled triangle with angles 30°, 60°, and 90°. The side opposite the 30° angle is labeled x. The side opposite the 60° angle is labeled $x\sqrt{3}$. The hypotenuse is labeled $2x$.</p> </div> <div style="text-align: center;"> <p>45° - 45° - 90°</p>  <p>A right-angled triangle with angles 45°, 45°, and 90°. The two legs are both labeled x. The hypotenuse is labeled $x\sqrt{2}$.</p> </div> </div>
Law of Sines:	$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$
Law of Cosines:	$a^2 = b^2 + c^2 - 2bc \cos A$ $b^2 = a^2 + c^2 - 2ac \cos B$ $c^2 = a^2 + b^2 - 2ab \cos C$
Probability	
Permutations:	${}_n P_r = \frac{n!}{(n-r)!}$
Combinations:	${}_n C_r = \frac{n!}{(n-r)!r!}$



EXAMPLE ITEMS Geometry Pre-AP, Sem 2

1

A composite figure is shown.

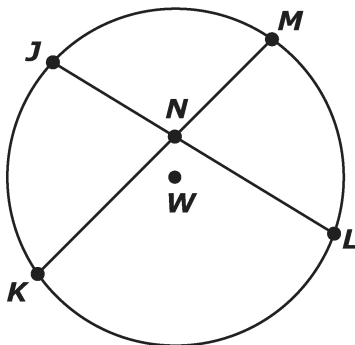


Based on the information in the diagram, what is the total area of the composite figure?

- A 102.2 cm²
- B 112.0 cm²
- C 131.7 cm²
- D 170.9 cm²

2

In circle W , $m\angle JNK = 67^\circ$ and $m\widehat{KL} = 104^\circ$.

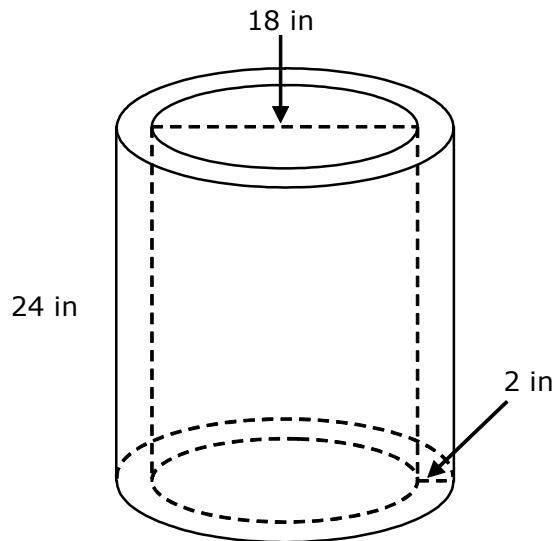


Based on this information, what is the measure of \widehat{JM} ?

- A 86°
- B 113°
- C 122°
- D 226°

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

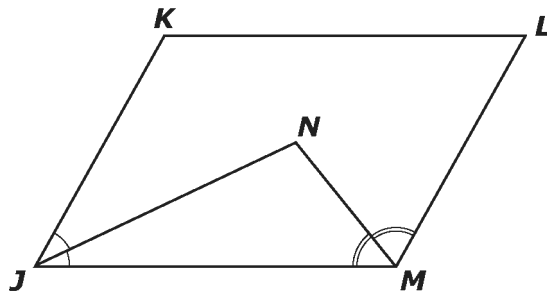
- 3 A section of a large insulated hot water pipe is shown. This section is a 24-inch long cylinder with a diameter of 18 inches. The lateral surface is coated with foam that is 2 inches thick.



What is the approximate volume of the foam insulation?

- A 1,460 cubic inches
- B 3,016 cubic inches
- C 3,780 cubic inches
- D 9,123 cubic inches

- 4 In the figure, $\overline{KL} \parallel \overline{MJ}$ and $\overline{JK} \parallel \overline{LM}$.

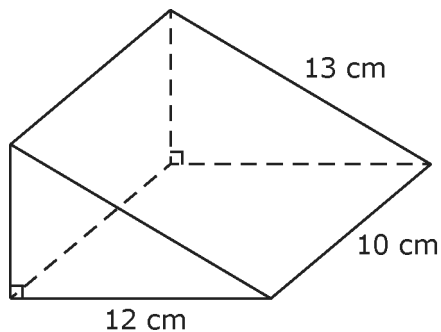


If $m\angle NML = 52^\circ$, what is the measure of $\angle JNM$?

- A 38°
- B 52°
- C 76°
- D 90°

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

- 5 Joseph is wrapping a gift shaped like a triangular prism.



What is the least amount of wrapping paper Joseph needs to wrap the gift, in square centimeters?

+	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

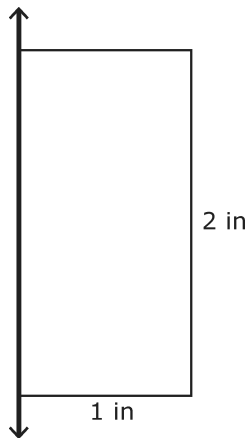
Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

- 6 Alexa has a standard deck of 52 playing cards. What is the probability that Alexa will draw a queen then a king with replacement?

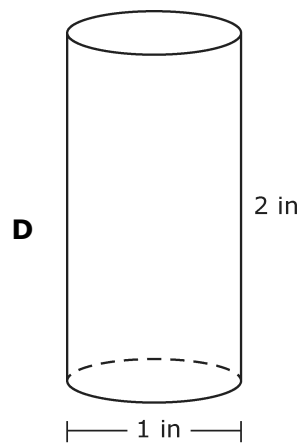
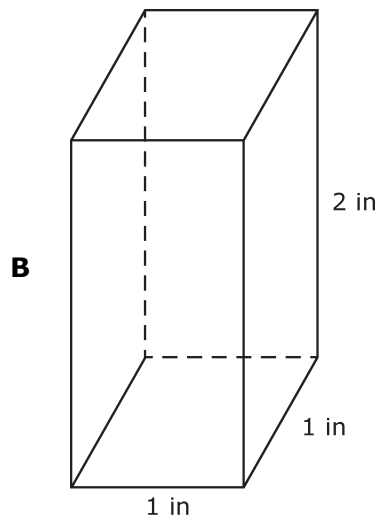
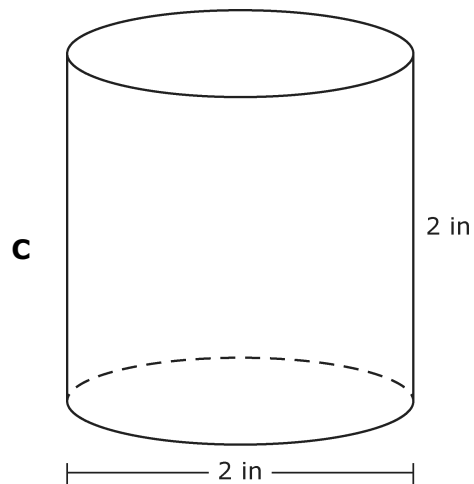
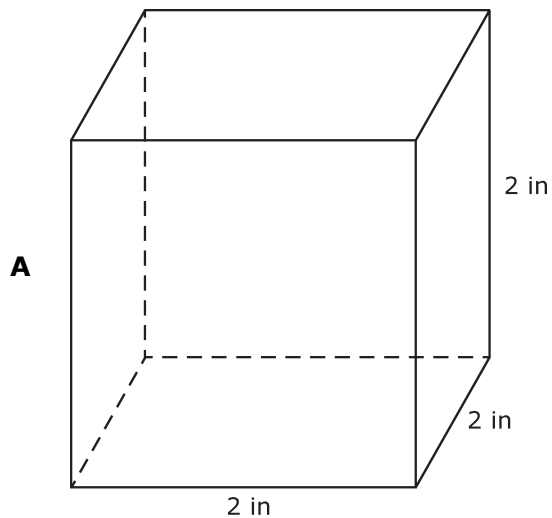
- A $\frac{4}{663}$
- B $\frac{1}{169}$
- C $\frac{1}{121}$
- D $\frac{3}{52}$

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

7 A line intersects a rectangle as shown.

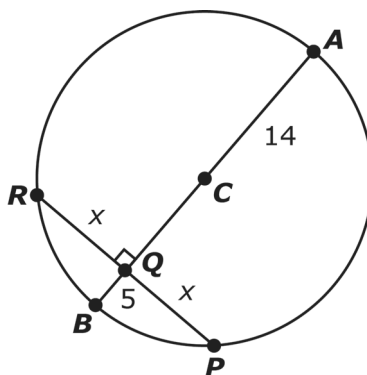


Which three-dimensional figure is formed by rotating the rectangle about the line?



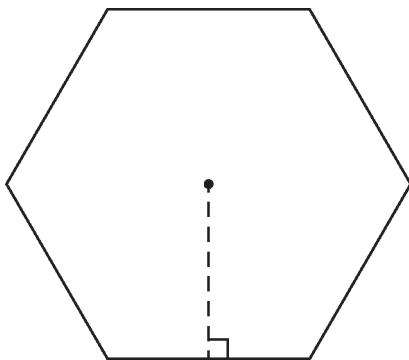
EXAMPLE ITEMS Geometry Pre-AP, Sem 2

- 8 In circle C , $\overline{RP} \perp \overline{AB}$



Based on the information in the diagram, what is the length of \overline{RP} ?

- A 8.4
 - B 10.7
 - C 16.7
 - D 21.4
- 9 The sides of a regular hexagon are 12 centimeters and the apothem is 10.4 centimeters.

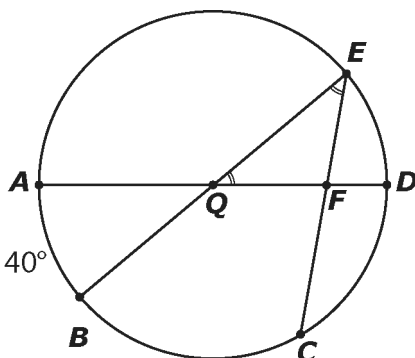


What is the approximate area of the hexagon?

- A 62.4 cm^2
- B 124.8 cm^2
- C 374.4 cm^2
- D 748.8 cm^2

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

- 10** In circle Q , \widehat{AB} measures 40° , \overline{AD} and \overline{BE} are diameters, and $\angle EQF \cong \angle QEF$.



Based on this information, what is the measure of \widehat{DC} , in degrees?

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

+	•	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
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	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

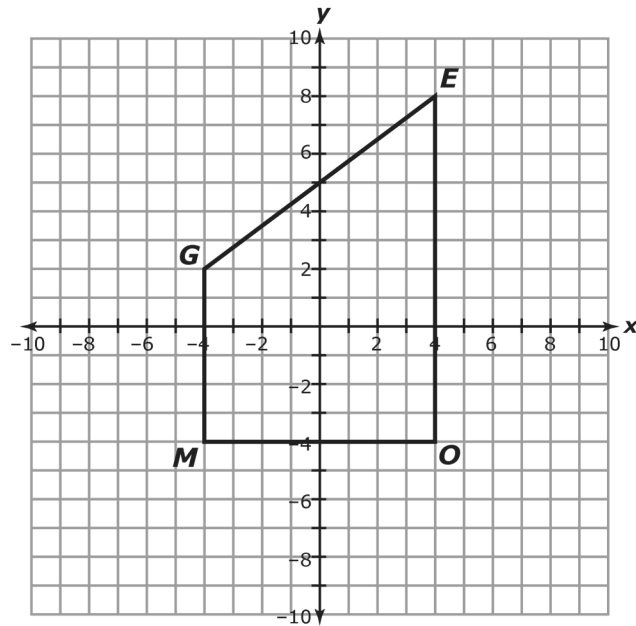
- 11** A pizza was cut into 8 equal slices. Leslie ate 5 slices. If the diameter of the pizza was 16 inches, what was the area of the pizza that Leslie ate?

- A** 25.1 square inches
- B** 125.7 square inches
- C** 201.1 square inches
- D** 502.7 square inches

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

12

Quadrilateral $GEOM$ is shown on the coordinate grid.



What is the probability that a point chosen at random in quadrilateral $GEOM$ will be in quadrant II?

- A 36.1%
- B 22.2%
- C 20.8%
- D 19.4%

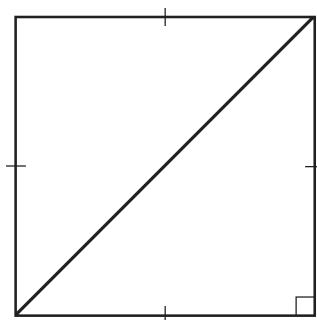
13

Sally has a hexagonal prism with a volume of $1,680 \text{ in}^3$. If she reduces the size of the hexagonal prism by a scale factor of $\frac{1}{2}$, which statement about Sally's new prism is true?

- A The volume of the new prism is $\frac{1}{2}$ the volume of the original prism.
- B The volume of the new prism is $\frac{1}{4}$ the volume of the original prism.
- C The volume of the new prism is $\frac{1}{6}$ the volume of the original prism.
- D The volume of the new prism is $\frac{1}{8}$ the volume of the original prism.

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

- 14 Maddox wants to put new carpet on his bedroom floor. His bedroom is a square with a 10-foot diagonal as shown in the diagram.



Based on this information, how many square feet of carpet does Maddox need for his bedroom?

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

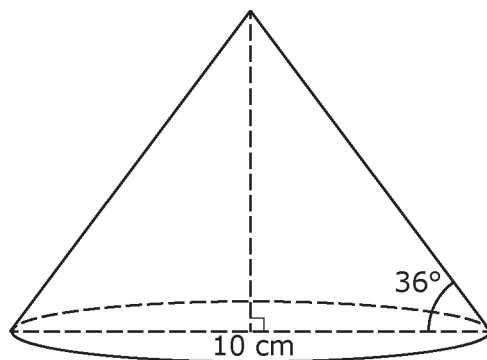
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	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 15 Mr. Ibarra has a class with 10 boys and 14 girls. The main office asks him to send four students to help deliver books. What is the probability that Mr. Ibarra will send two boys and two girls?

- A $\frac{35}{144}$
- B $\frac{65}{1,012}$
- C $\frac{455}{9,216}$
- D $\frac{1,225}{20,736}$

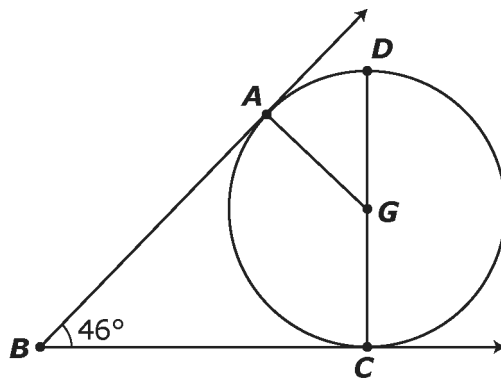
EXAMPLE ITEMS Geometry Pre-AP, Sem 2

- 16 The base of a cone has a diameter of 10 centimeters, and the base of the cone forms a 36° angle with the slant height, as shown in the diagram.



Based on this information, what is the approximate height of the cone?

- A 3.63 centimeters
 - B 4.05 centimeters
 - C 6.88 centimeters
 - D 7.27 centimeters
- 17 \vec{BA} and \vec{BC} are tangent to circle G , \overline{CD} is a diameter, and $m\angle ABC = 46^\circ$.

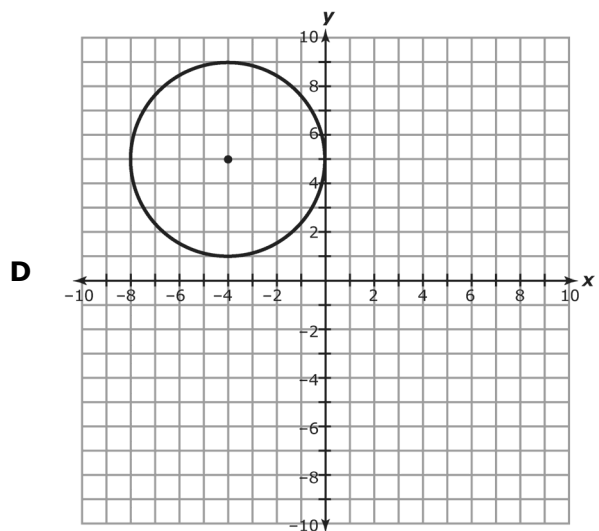
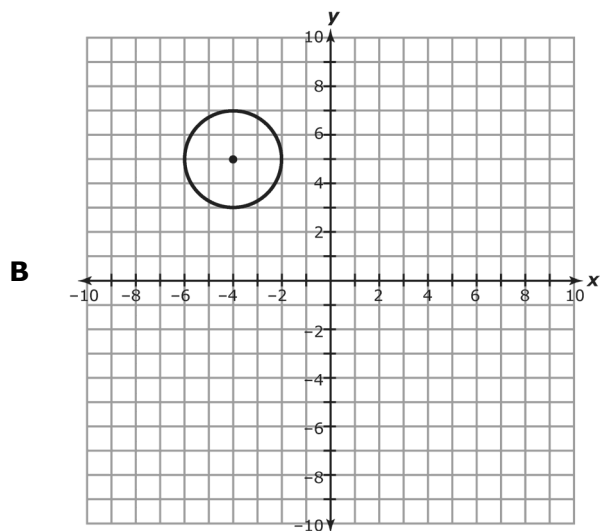
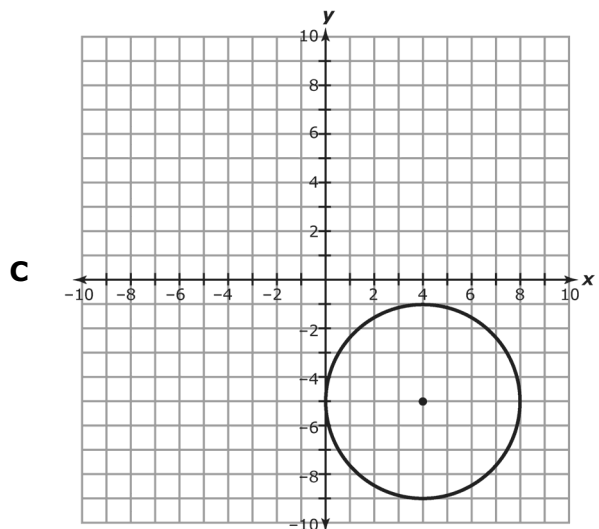
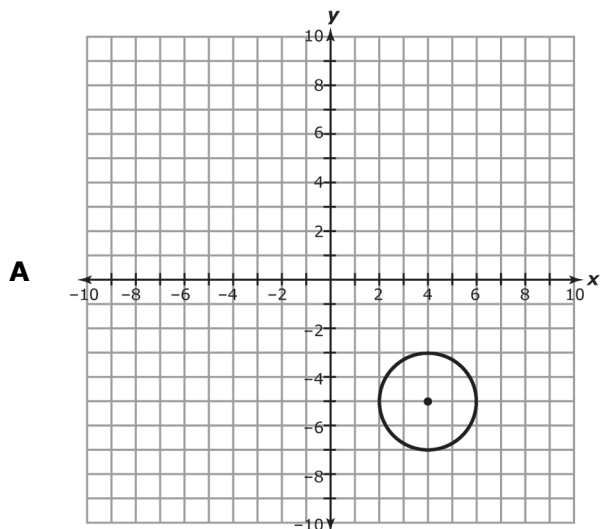


Based on this information, what is the measure of $\angle AGD$?

- A 113°
- B 67°
- C 46°
- D 23°

EXAMPLE ITEMS Geometry Pre-AP, Sem 2

18 Which graph represents the equation $(x - 4)^2 + (y + 5)^2 = 4$?



EXAMPLE ITEMS Geometry Pre-AP Key, Sem 2

Item#	Key	SE	SE Justification
1	A	G.11B	Determine the area of composite two-dimensional figures comprised of a combination of regular polygons, [and] sectors of circles to solve problems using appropriate units of measure.
2	C	G.5A	Investigate patterns to make conjectures about geometric relationships, including special angles of circles.
3	B	G.11D	Apply the formulas for the volume of three-dimensional figures, including cylinders to solve problems using appropriate units of measure.
4	D	G.6E	Prove a quadrilateral is a parallelogram and apply these relationships to solve problems.
5	360	G.11C	Apply the formulas for the lateral surface area of three-dimensional figures, including prisms to solve problems using appropriate units of measure.
6	B	G.13C	Compute the probability of two events occurring together with replacement.
7	C	G.10A	Identify three-dimensional objects generated by rotations of two-dimensional shapes.
8	D	G.5A	Investigate patterns to make conjectures about geometric relationships, including special segments of circles.
9	C	G.11A	Apply the formula for the area of regular polygons to solve problems using appropriate units of measure.
10	60	G.12B	Apply the proportional relationship between the measure of an arc length of a circle and the circumference of the circle to solve problems.
11	B	G.12C	Apply the proportional relationship between the measure of the area of a sector of a circle and the area of the circle to solve problems.
12	D	G.13B	Determine probabilities based on area to solve problems.
13	D	G.10B	Describe how changes in the linear dimensions of a shape affect its volume, including proportional dimensional change.
14	50	G.9B	Apply the relationships in special right triangles 45° - 45° - 90° to solve problems.
15	B	G.13C	Compute the probability of two events occurring together without replacement.
16	A	G.9A	Determine the lengths of sides in a right triangle by applying the trigonometric ratios tangent to solve problems.
17	C	G.12A	Apply theorems about circles, including relationships among angles, radii, chords, [and] tangents to solve non-contextual problems.
18	A	G.12E	Determine the equation for the graph of a circle with radius r and center (h, k) , $(x - h)^2 + (y - k)^2 = r^2$.