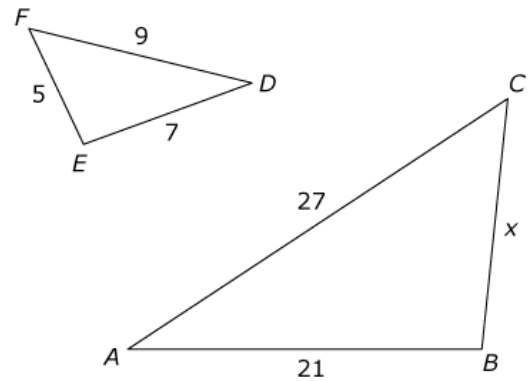


Non-Calculator Part

1. The figure shows $\triangle ABC \sim \triangle DEF$ with side lengths as indicated.

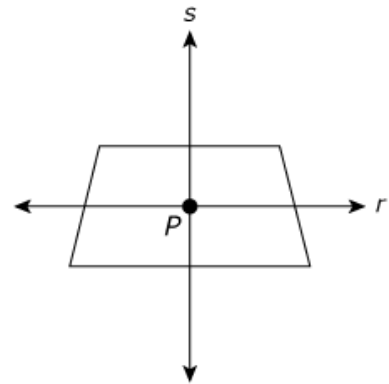


Enter your answer in the box.

2. The figure shows two perpendicular lines s and r intersecting at point P in the interior of a trapezoid. Line r is parallel to the bases and bisects both legs of the trapezoid. Line s bisects both bases of the trapezoid.

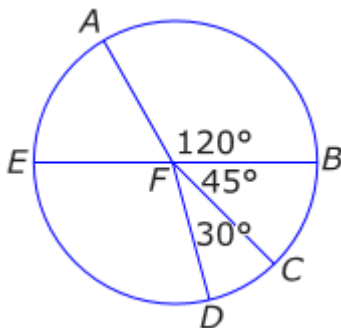
Which transformation will always carry the figure onto itself? Select **all** that apply.

- A. a reflection across line r
- B. a reflection across line s
- C. a rotation of 90° clockwise about point P
- D. a rotation of 180° clockwise about point P
- E. a rotation of 270° clockwise about point P



3. The circle with center F is divided into sectors. In circle F , \overline{EB} is a diameter. The radius of circle F is 3 units. Drag and drop each arc length to its subtended central angle.

$\frac{\pi}{2}$	π	2π	$\frac{3\pi}{4}$
-----------------	-------	--------	------------------



Subtended Central Angle	Arc Length
$\angle AFB$	<input style="width: 50px; height: 20px;" type="text"/>
$\angle BFC$	<input style="width: 50px; height: 20px;" type="text"/>
$\angle CFD$	<input style="width: 50px; height: 20px;" type="text"/>
$\angle AFE$	<input style="width: 50px; height: 20px;" type="text"/>

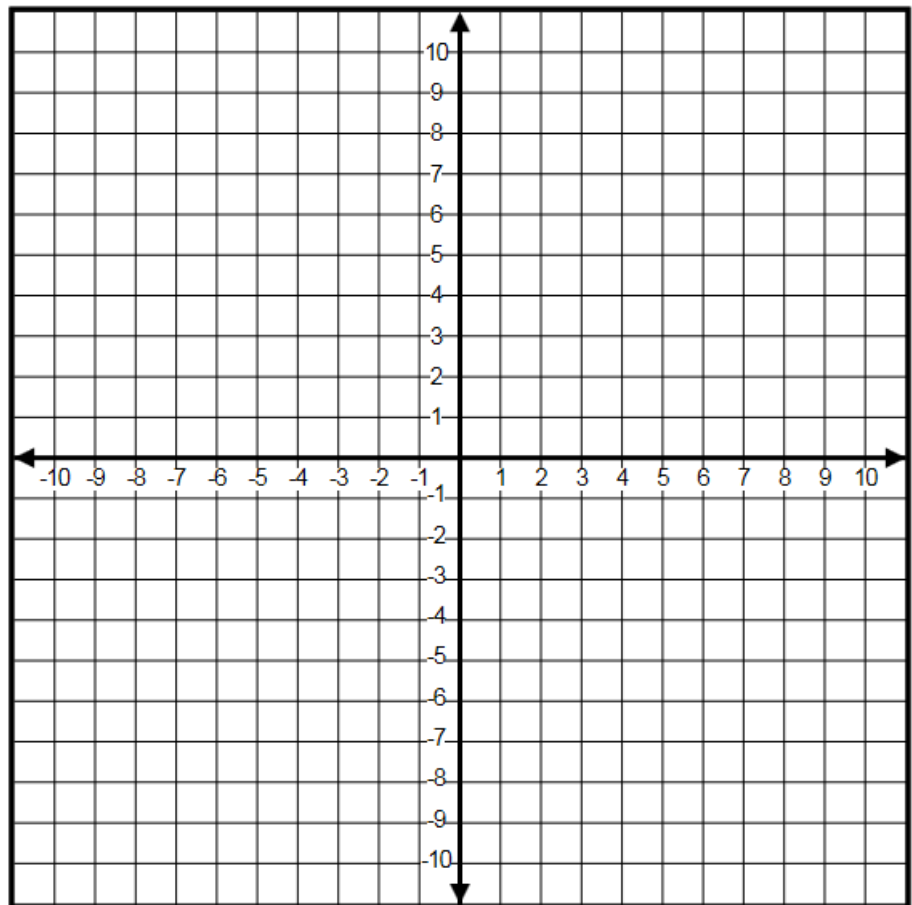
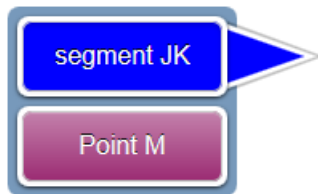
Non-Calculator Part (continued)

4. A rectangle will be rotated 360° about a line which contains the point of intersection of its diagonals and is parallel to a side. What three-dimensional shape will be created as a result of the rotation?

- A. a cube
 B. a rectangular prism
 C. a cylinder
 D. a sphere

5. Line segment \overline{JK} in the coordinate plane has endpoints with coordinates $(-4, 11)$ and $(8, -1)$. Graph \overline{JK} and find two possible locations for point M so that M divides \overline{JK} into two parts with lengths in a ratio of 1:3.

To graph a line segment, select “segment JK” and then plot two points on the coordinate plane. A segment will connect the points. Select “Point M” and then plot the two points.



Non-Calculator Part (continued)

6. The equation $x^2 + y^2 - 4x + 2y = b$ describes a circle.

Part A

Determine the y -coordinate of the circle.

Enter your answer in the box.

Part B

The radius of the circle is 7 units. What is the value of b in the equation?

Enter your answer in the box.

7. In the coordinate plane,

$\triangle ABC$ has vertices at $A(1, -2)$, $B(1, 0.5)$, $C(2, 1)$; and

$\triangle DEF$ has vertices at $D(4, -3)$, $E(4, 2)$, $F(6, 3)$.

Select from the drop-down menus to correctly complete the sentence.

The triangles are similar because $\triangle DEF$ is the image of $\triangle ABC$ under a dilation with center

Choose...
(0, 0)
(1, -2)
(-2, -1)

and scale factor

Choose...
2
3
4

Calculator Part

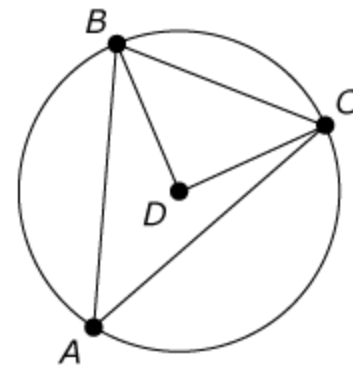
The Texas Instruments TI-84+ online graphing calculator will be available for the Infrastructure Trials, Field Tests and Operational Tests. However, it is not available at this time for the non-secure practice tests. Users wishing to access this calculator may navigate to the PARCC practice landing page (<http://practice.parcc.testnav.com>) and select the “Tutorials” tab for a link to a trial software version. Additionally, a handheld graphing calculator may be used to solve the math items in this section. Handheld calculator use is allowed during the PARCC test administration. Refer to PARCC’s calculator policy for information about calculator use on the PARCC assessment, (see Section 2.9 of the Test Coordinator Manual at <http://parcc.pearson.com/Manuals>).

1. The figure shows $\triangle ABC$ inscribed in circle D .

If $m\angle CBD = 44^\circ$, find $m\angle BAC$.

Enter your answer in the box.

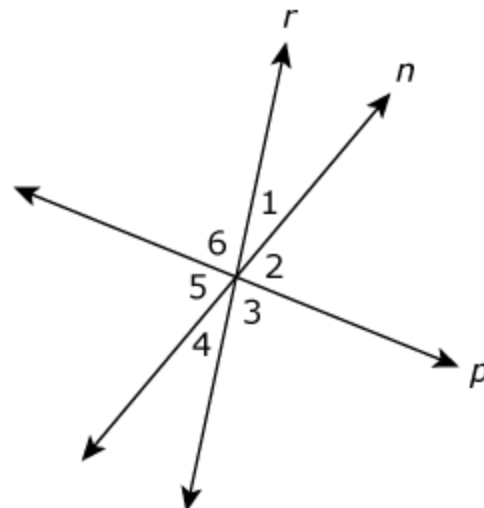
degrees



2. The figure shows lines r , n , and p intersecting to form angles numbered 1, 2, 3, 4, 5, and 6. All three lines lie in the same plane.

Based on the figure, which of the individual statements would provide enough information to conclude that line r is perpendicular to line p ?

- A. $m\angle 2 = 90^\circ$
- B. $m\angle 6 = 90^\circ$
- C. $m\angle 3 = m\angle 6$
- D. $m\angle 1 + m\angle 6 = 90^\circ$
- E. $m\angle 3 + m\angle 4 = 90^\circ$
- F. $m\angle 4 + m\angle 5 = 90^\circ$

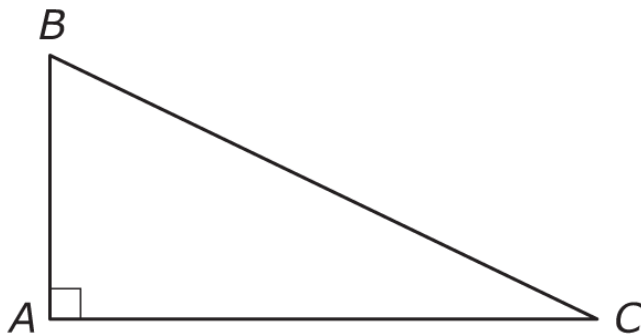


not to scale

Calculator Part (continued)

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

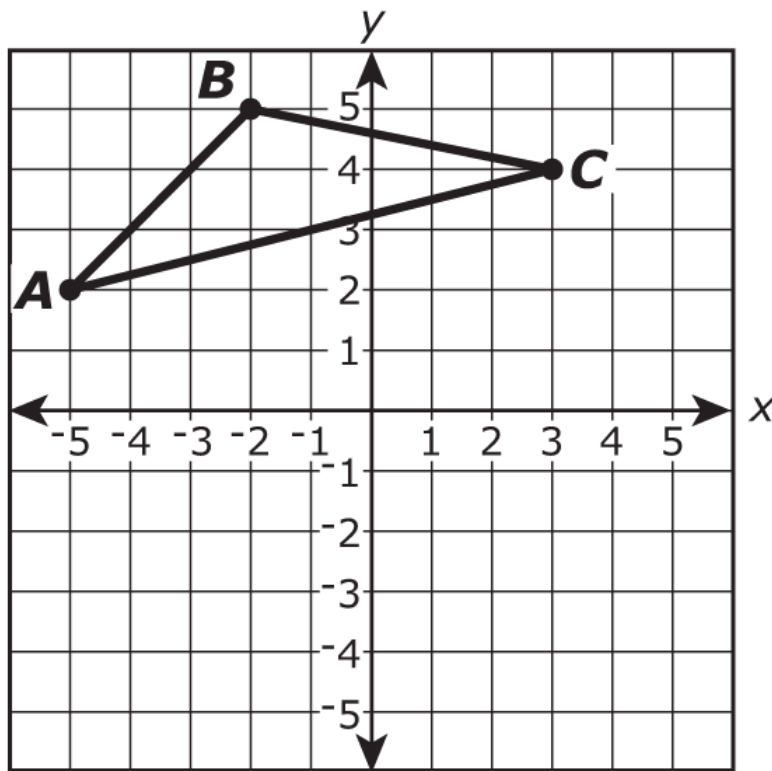
- A. $r + s$
- B. $r - s$
- C. $s - r$
- D. $\frac{r}{s}$



4. Triangle ABC is shown in the xy -coordinate plane.

The triangle will be rotated 180° clockwise around the point $(3, 4)$ to create triangle $A'B'C'$.

Indicate whether each of the listed features of the image will or will not be the same as the corresponding feature in the original triangle by selecting the appropriate box in the table.



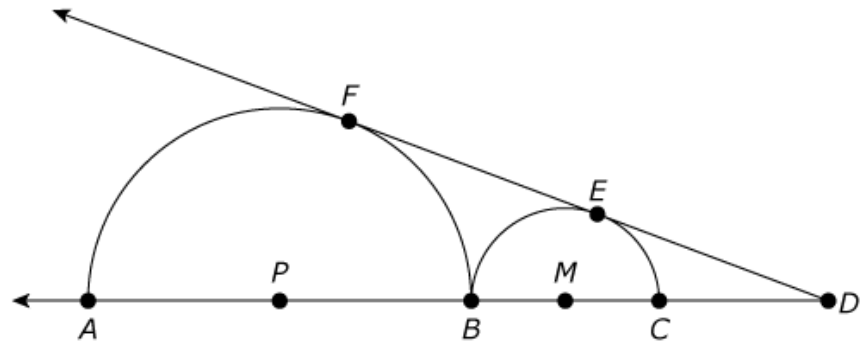
	The coordinates of A'	The coordinates of C'	The perimeter of $\Delta A'B'C'$	The area of $\Delta A'B'C'$	The measure of $\angle B'$	The slope of $\overline{A'C'}$
Will be the Same	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Will Not be the Same	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Calculator Part (continued)

5. The figure shows two semi-circles with centers P and M . The semi-circles are tangent to each other at point B , and \overline{DE} is tangent to both semi-circles at F and E .

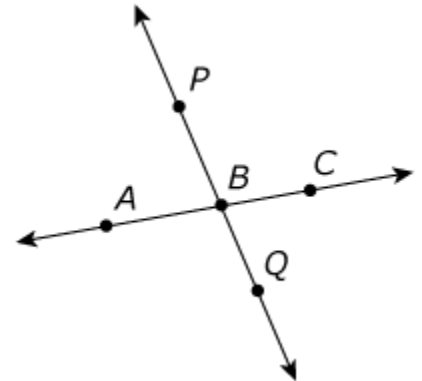
If $PB = BC = 6$, what is ?

- A. 6
- B. $\sqrt{48}$
- C. 8
- D. $\sqrt{72}$



6. The figure shows \overleftrightarrow{AC} and \overleftrightarrow{PQ} intersecting at point B . $\overleftrightarrow{A'C'}$ and $\overleftrightarrow{P'Q'}$ will be the images of lines AC and PQ , respectively, under a dilation with center P and scale factor 2.

Use the choices in the drop-down menus to complete the sentence.



Line $A'C'$ will be

Choose...
parallel to
perpendicular to
the same line as

\overleftrightarrow{AC} and line $P'Q'$ will be

Choose...
parallel to
perpendicular to
the same line as

\overleftrightarrow{PQ} .

7. The equation $x^2 - 8x + y^2 = 9$ defines a circle in the xy -coordinate plane.

Select from the choices in the drop-down menus to complete the sentence.

To find the center of the circle and the length of the radius, the equation can be re-written as

(Choose...
 $x + 4$
 $x - 4$
 $x + 16$
 $x - 16$)² + $y^2 =$ Choose...
25
13
9
5

Calculator Part (continued)

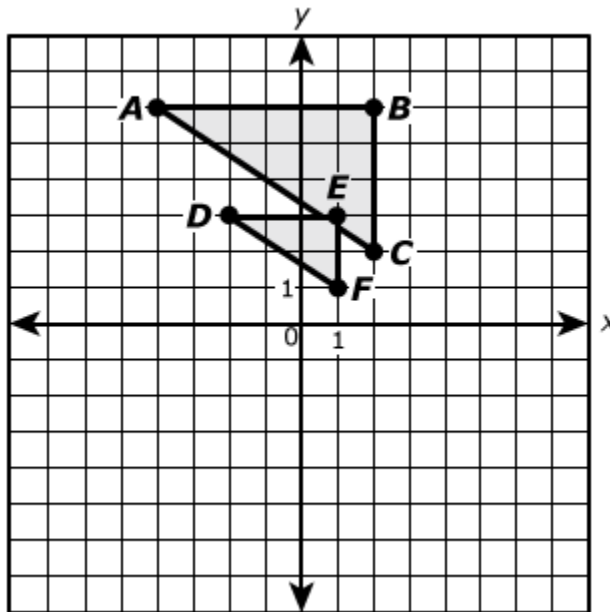
8. The table shows the approximate measurements of the Great Pyramid of Giza in Egypt and the Pyramid of Kukulcan in Mexico.

Pyramid	Height (meters)	Area of Base (square meters)
Great Pyramid of Giza	147	52,900
Pyramid of Kukulcan	30	3,025

Approximately what is the difference between the volume of the Great Pyramid of Giza and the volume of the Pyramid of Kukulcan?

- A. 1,945,000 cubic meters
- B. 2,562,000 cubic meters
- C. 5,835,000 cubic meters
- D. 7,686,000 cubic meters

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



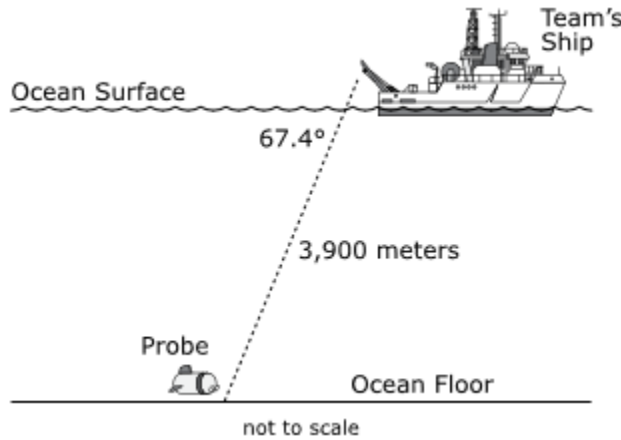
What is the scale factor and the center of dilation that will carry $\triangle ABC$ onto $\triangle DEF$?

Enter your answers in the boxes to complete the sentence.

The scale factor is and the center of dilation is at $(\text{ }, \text{ })$.

Calculator Part (continued)

10. An archaeological team is excavating artifacts from a sunken merchant vessel on the ocean floor. To help with the exploration, the team uses a robotic probe. The probe travels approximately 3,900 meters at an angle of depression of 67.4 degrees from the team’s ship on the ocean surface down to the sunken vessel on the ocean floor. The figure shows a representation of the team’s ship and the probe.



Select from the drop-down menus to correctly complete the sentence.

When the probe reaches the ocean floor, the probe will be approximately

- | |
|-----------|
| Choose... |
| 1,247 |
| 1,500 |
| 1,623 |
| 3,377 |
| 3,600 |

meters below the ocean surface. When the probe reaches the ocean floor, the horizontal distance of the probe behind the team’s ship on the ocean surface will be approximately

- | |
|-----------|
| Choose... |
| 1,247 |
| 1,500 |
| 1,623 |
| 3,377 |
| 3,600 |

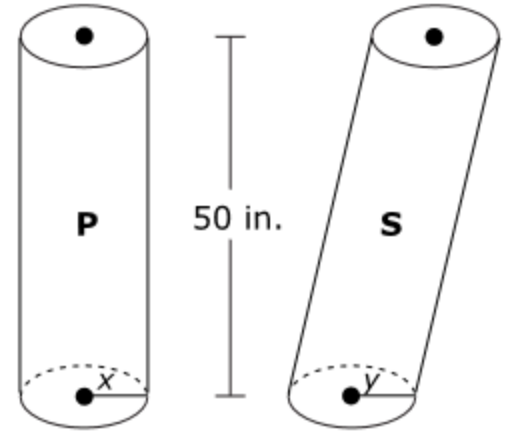
meters.

Calculator Part (continued)

11. Two cylinders each with a height of 50 inches are shown.

Which statements about cylinders P and S are true?
Select **all** that apply.

- A. If $x = y$, the volume of cylinder P is greater than the volume of cylinder S, because cylinder P is a right cylinder.
- B. If $x = y$, the volume of cylinder P is equal to the volume of cylinder S, because the cylinders are the same height.
- C. If $x = y$, the volume of cylinder P is less than the volume of cylinder S, because cylinder S is slanted.
- D. If $x < y$, the area of a horizontal cross section of cylinder P is greater than the area of a horizontal cross section of cylinder S.
- E. If $x < y$, the area of a horizontal cross section of cylinder P is equal to the area of a horizontal cross section of cylinder S.
- F. If $x < y$, the area of a horizontal cross section of cylinder P is less than the area of a horizontal cross section of cylinder S.



12. Triangle ABC has vertices at $A(1, 2)$, $B(4, 6)$, and $C(4, 2)$ in the coordinate plane.

The triangle will be reflected over the x -axis and then rotated 180° about the origin to form $\triangle A'B'C'$.

What are the vertices of $\triangle A'B'C'$?

- A. $A'(1, -2)$, $B'(4, -6)$, $C'(4, -2)$
- B. $A'(-1, -2)$, $B'(-4, -6)$, $C'(-4, -2)$
- C. $A'(-1, 2)$, $B'(-4, 6)$, $C'(-4, 2)$
- D. $A'(1, 2)$, $B'(4, 6)$, $C'(4, 2)$

Calculator Part (continued)

13. A steel pipe in the shape of a right-circular cylinder is used for drainage under a road. The length of the pipe is 12 feet and its diameter is 36 inches. The pipe is open at both ends.

Part A

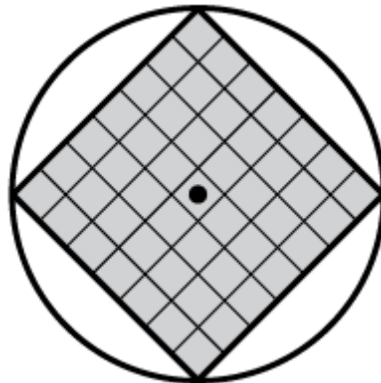
The outer surface of the pipe is coated with protective material. How many square feet is the outer surface of the pipe?

Give your answer to the nearest integer. Enter your answer in the box.

square feet

Part B

A wire screen in the shape of a square is attached at one end of the pipe to allow water to flow through but to keep people from wandering into the pipe. The length of the diagonals of the screen is equal to the diameter of the pipe. The figure represents the placement of the screen at the end of the pipe.



Select from the drop-down menus to correctly complete the sentence.

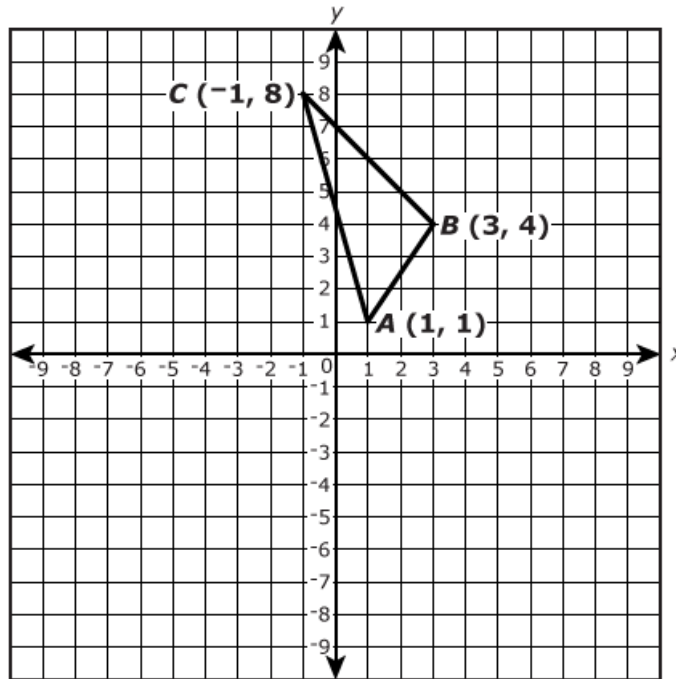
The perimeter of the screen is approximately inches, and the area of the screen is square inches.

The first dropdown menu contains the options: 72, 102, 125.

The second dropdown menu contains the options: 324, 648, 1,018.

Calculator Part (continued)

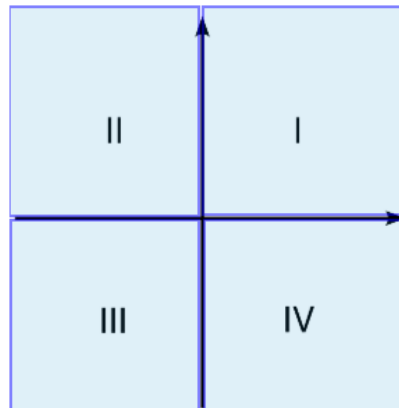
14. Triangle ABC is graphed in the coordinate plane with vertices $A(1, 1)$, $B(3, 4)$, and $C(-1, 8)$ as shown in the figure.



Part A

Triangle ABC will be reflected across the line $y = 1$ to form $\Delta A'B'C'$.

Select all quadrants of the xy -coordinate plane that will contain at least one vertex of $\Delta A'B'C'$.



Part B

What are the coordinates of B' ?

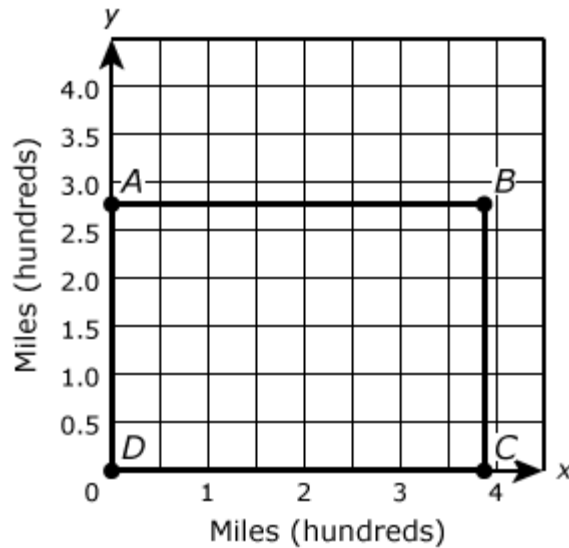
Enter your answers in the boxes.

(,)

Calculator Part (continued)

15. The figure shows rectangle $ABCD$ in the coordinate plane with point A at $(0, 2.76)$, B at $(3.87, 2.76)$, C at $(3.87, 0)$, and D at the origin.

Rectangle $ABCD$ can be used to approximate the size of the state of Colorado with the x and y axes representing hundreds of miles.



Part A

Based on the information given, how many miles is the perimeter of Colorado?

Enter your answer in the box.

miles

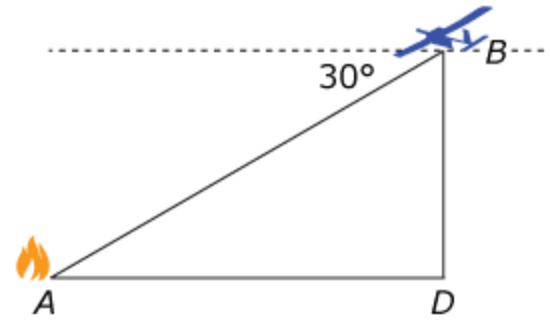
Part B

At the end of 2010, the population of Colorado was 5,029,196 people. Based on the information given, what was the population density at the end of 2010?

- A. 25 people per square mile
- B. 47 people per square mile
- C. 2,269 people per square mile
- D. 7,586 people per square mile

Calculator Part (continued)

16. An unmanned aerial vehicle (UAV) is equipped with cameras to monitor forest fires. The figure represents a moment in time at which a UAV, at point B , flying at an altitude of 1,000 meters (m) is directly above point D on the forest floor.



At the moment in time represented by the figure, the angle of depression from the UAV to the fire has a measure of 30° .

Part A

At the moment in time represented by the figure, what is the distance from the UAV to the fire? Enter your answer in the box.

 meters

Part B

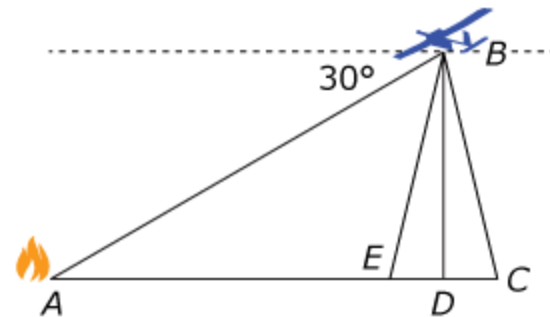
What is the distance, to the nearest meter, from the fire to point D ? Enter your answer in the box.

 meters

Part C

Points C and E represent the linear range of view of the camera when it is pointed directly down at point D .

The field of view of the camera is 20° and is represented in the figure by $\angle CBE$. If the camera takes a picture directly over point D , what is the approximate width of the forest floor that will be captured in the picture?

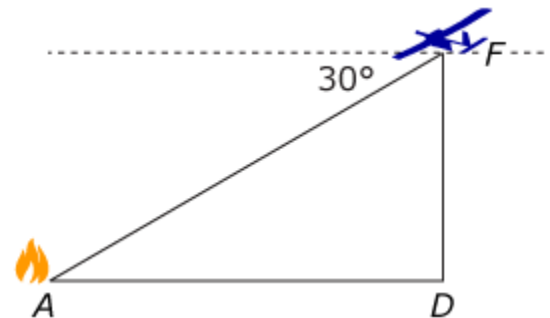


- | | | | |
|----|------------|----|------------|
| A. | 170 meters | B. | 353 meters |
| C. | 364 meters | D. | 728 meters |

Part D

The UAV is flying at a speed of 13 meters per second in the direction toward the fire. Suppose the altitude of the UAV is now 800 meters. The new position is represented by F in the figure.

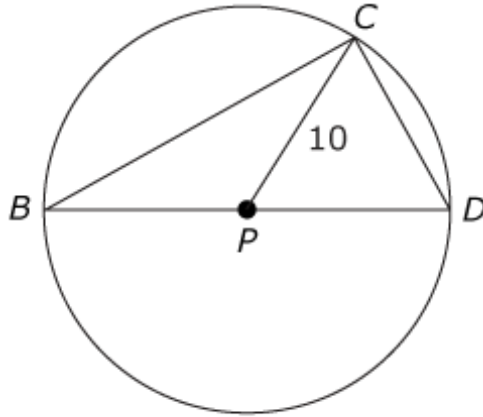
From its position at point F , how many minutes, to the nearest tenth of a minute, will it take the UAV to be directly over the fire?



- | | | | | | | | |
|----|-----|----|-----|----|-----|----|-----|
| A. | 0.6 | B. | 1.2 | C. | 1.8 | D. | 2.0 |
|----|-----|----|-----|----|-----|----|-----|

Calculator Part (continued)

17. The figure shows a circle with center P , a diameter \overline{BD} , and inscribed $\triangle BCD$. $PC = 10$. Let $m\angle CBE = x^\circ$ and $m\angle BCD = (x + 54)^\circ$.



not to scale

Part A

Find the value of x .

Enter your answer in the box.

$x =$

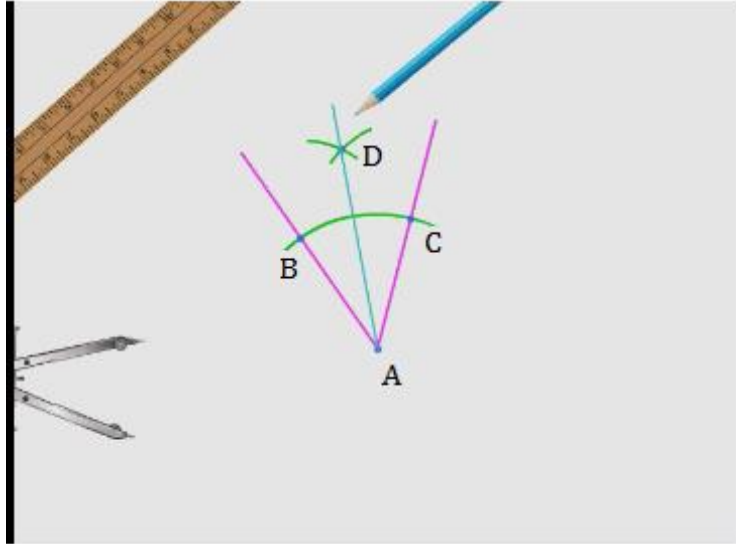
Part B

Select from the drop-down menus to correctly complete the sentence.

The length of \overline{CD} is Choose...
10
less than 10
greater than 10 because Choose...
 $\triangle CPD$ is equilateral
 $m\angle CPD < 60^\circ$
 $m\angle CPD > 60^\circ$

Calculator Part (continued)

18. Use the information provided in the animation to answer the questions about the geometric construction. (*note: an online video plays demonstrating the construction.*)



Part A

The first step of the construction is to draw an arc centered at point A that intersects both sides of the given angle. What is established by the first step?

- A. $\overline{AB} \cong \overline{BC}$
- B. $\overline{AB} \cong \overline{AC}$
- C. $\overline{AD} \cong \overline{AC}$
- D. $\overline{BD} \cong \overline{CD}$

Part B

Select from the drop-down menus to correctly complete the sentence.

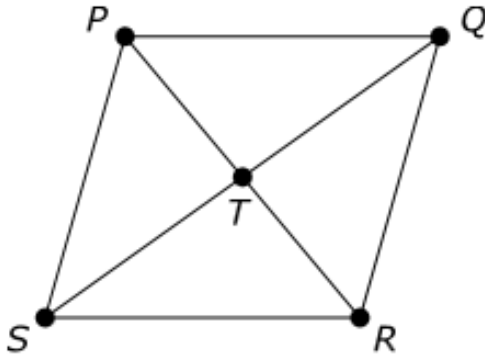
The construction creates congruent triangles. Triangle ABD and $\triangle ACD$ are congruent

because of the Choose...
side, side, side
angle, side, angle
side, angle, side theorem. It follows that \overline{AD} must be the angle

bisector of $\angle BAC$ because Choose...
 $\angle ACD \cong \angle ABD$
 $\angle BAC \cong \angle BDC$
 $\angle BAD \cong \angle CAD$
 $\angle BAD \cong \angle ABD$

Calculator Part (continued)

19. One method that can be used to prove that the diagonals of a parallelogram bisect each other is shown in the given partial proof.



Given: Quadrilateral PQRS is a parallelogram.

Prove: $PT = RT$ and $ST = QT$

Statements	Reasons
1. Quadrilateral PQRS is a parallelogram	1. Given
2. $\overline{PQ} \parallel \overline{SR}$ $\overline{PS} \parallel \overline{QR}$	2. Definition of parallelogram
3. $\angle PQS \cong \angle RSQ$ $\angle QPR \cong \angle SRP$	3. ?
4. ?	4. Opposite sides of a Parallelogram are congruent
5. $\triangle SRT \cong \triangle QPT$	5. ?
6. $\overline{PT} \cong \overline{RT}$ $\overline{ST} \cong \overline{QT}$	6. Corresponding parts of congruent triangles are congruent
7. $PT = RT$ $ST = QT$	7. Definition of congruent line segments

Part A

Which reason justifies the statement for step 3 in the proof?

- A. When 2 parallel lines are intersected by a transversal, same side interior angles are congruent.
- B. When 2 parallel lines are intersected by a transversal, alternate interior angles are congruent.
- C. When 2 parallel lines are intersected by a transversal, same side interior angles are supplementary.
- D. When 2 parallel lines are intersected by a transversal, alternate interior angles are supplementary.

Part B

Which statement is justified by the reason in step 4?

- A. $\overline{PQ} \cong \overline{RS}$
- B. $\overline{PQ} \cong \overline{SP}$
- C. $\overline{PT} \cong \overline{TR}$
- D. $\overline{SQ} \cong \overline{PR}$

Part C

Which reason justifies the statement for step 5 in the proof?

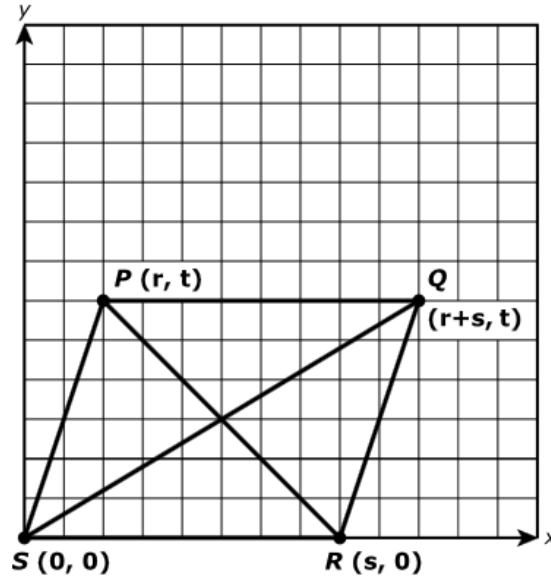
- A. side-side-side triangle congruence
- B. side-angle-side triangle congruence
- C. angle-side-angle triangle congruence
- D. angle-angle-side triangle congruence

Calculator Part (continued)

19. (continued)

Part D

Another method of proving diagonals of a parallelogram bisect each other uses a coordinate grid.

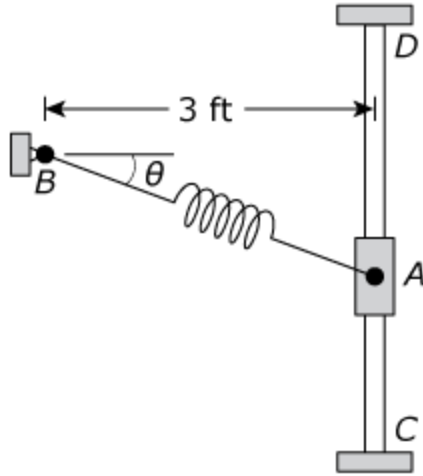


What could be shown about the diagonals of parallelogram $PQRS$ to complete the proof?

- A. \overline{PR} and \overline{SQ} have the same length.
- B. \overline{PR} is a perpendicular bisector of \overline{SQ} .
- C. \overline{PR} and \overline{SQ} have the same midpoint.
- D. Angles formed by the intersection of \overline{PR} and \overline{SQ} each measure 90° .

Calculator Part (continued)

20. A spring is attached at one end to support B and at the other end to collar A , as represented in the figure. Collar A slides along the vertical bar between points C and D . In the figure, the angle θ is the angle created as the collar moves between points C and D .



Part A

When $\theta = 28^\circ$, what is the distance from point A to point B to the nearest tenth of a foot?

Enter your answer in the box.

feet

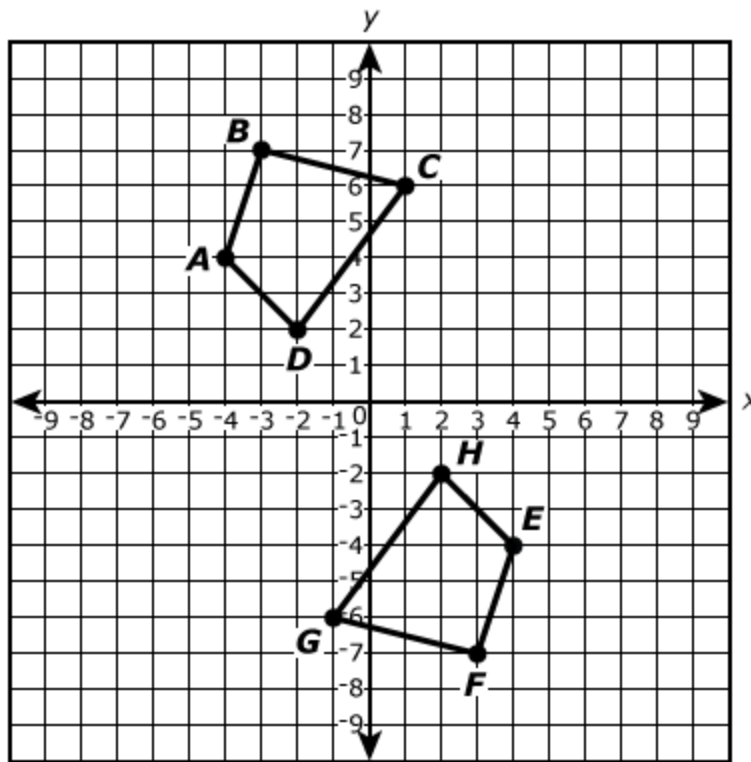
Part B

When the spring is stretched and the distance from point A to point B is 5.2 feet, what is the value of θ to the nearest tenth of a degree?

- A. 35.2°
- B. 45.1°
- C. 54.8°
- D. 60.0°

Calculator Part (continued)

21. Quadrilaterals $ABCD$ and $EFGH$ are shown in the coordinate plane.



Part A

Quadrilateral $EFGH$ is the image of $ABCD$ after a transformation or sequence of transformations.

Which could be the transformation or sequence of transformations? Select **all** that apply.

- A. a translation of 3 units to the right, followed by a reflection across the x -axis
- B. a rotation of 180° about the origin
- C. a translation of 12 units downward, followed by a reflection across the y -axis
- D. a reflection across the y -axis followed by a reflection across the x -axis
- E. a reflection across the line with equation $y = x$

Part B

Quadrilateral $ABCD$ will be reflected across the x -axis and the rotated 90° clockwise about the origin to create quadrilateral $A'B'C'D'$. What will be the y -coordinate of B' ?

Enter your answer in the box.

Calculator Part (continued)

22. Point B is the center of a circle, and \overline{AC} is a diameter of the circle. Point D is a point on the circle different from A and C .

Part A

Drag and drop the following choices into the boxes to indicate which statements are always true, sometimes true or never true.

Always True
Sometimes True
Never True

Statements	
$AD > CD$	<div style="border: 1px solid black; width: 100%; height: 30px;"></div>
$m\angle CBD = \frac{1}{2}(m\angle CAD)$	<div style="border: 1px solid black; width: 100%; height: 30px;"></div>
$m\angle CBD = 90^\circ$	<div style="border: 1px solid black; width: 100%; height: 30px;"></div>
$m\angle ABD = 2(m\angle CBD)$	<div style="border: 1px solid black; width: 100%; height: 30px;"></div>

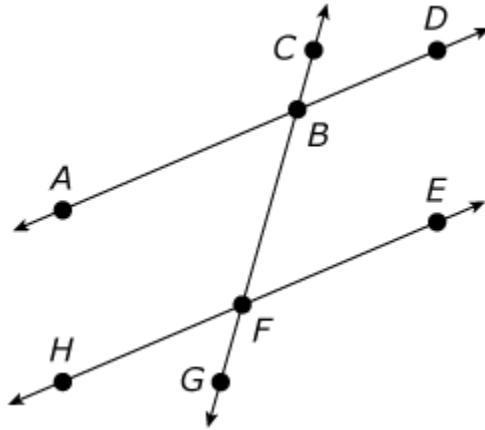
Part B

If $m\angle BDA = 20^\circ$, what is $m\angle CBD$?

- A. 20°
- B. 40°
- C. 70°
- D. 140°

Calculator Part (continued)

23. In the figure shown, \overleftrightarrow{CF} intersects \overleftrightarrow{AD} and \overleftrightarrow{EH} at points B and F respectively.



Part A

- Given: $\angle CBD \cong \angle BFE$
- Prove: $\angle ABF \cong \angle BFE$

Select from the drop-down menus to support each line of the proof.

Statement: $\angle CBD \cong \angle BFE$

Reason: Choose...

- Given
- Definition of congruent angles
- Vertical angles are congruent
- Reflexive property of congruence
- Symmetric property of congruence
- Transitive property of congruence

Statement: $\angle CBD \cong \angle ABF$

Reason: Choose...

- Given
- Definition of congruent angles
- Vertical angles are congruent
- Reflexive property of congruence
- Symmetric property of congruence
- Transitive property of congruence

Statement: $\angle ABF \cong \angle BFE$

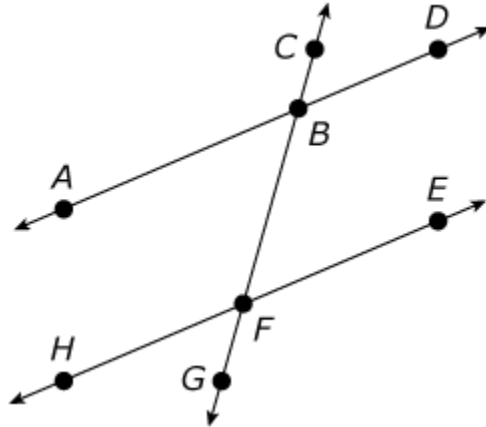
Reason: Choose...

- Given
- Definition of congruent angles
- Vertical angles are congruent
- Reflexive property of congruence
- Symmetric property of congruence
- Transitive property of congruence

Calculator Part (continued)

23. (continued)

In the figure shown, \overleftrightarrow{CF} intersects \overleftrightarrow{AD} and \overleftrightarrow{EH} at points B and F respectively.



Part B

- Given: $m\angle CBD = m\angle BFE$
- Prove: $m\angle BFE + m\angle DBF = 180^\circ$

Select from the drop-down menus to support each line of the proof.

Statement: $m\angle CBD = m\angle BFE$

Reason: Choose...
 Given
 Angles that form a linear pair are supplementary
 Angles that are adjacent are supplementary
 Reflexive property of equality
 Substitution property of equality
 Transitive property of equality

Statement: $m\angle CBD + m\angle DBF = 180^\circ$

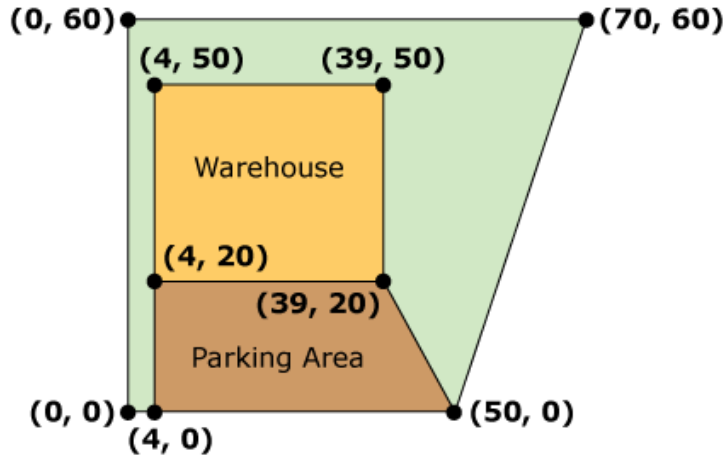
Reason: Choose...
 Given
 Angles that form a linear pair are supplementary
 Angles that are adjacent are supplementary
 Reflexive property of equality
 Substitution property of equality
 Transitive property of equality

Statement: $m\angle BFE + m\angle DBF = 180^\circ$

Reason: Choose...
 Given
 Angles that form a linear pair are supplementary
 Angles that are adjacent are supplementary
 Reflexive property of equality
 Substitution property of equality
 Transitive property of equality

Calculator Part (continued)

24. Luke purchased a warehouse on a plot of land for his business. The figure represents a plan of the land showing the location of the warehouse and parking area. The coordinates represent points on a rectangular grid with units in feet.



Part A

What is the perimeter of the plot of land?

Express your answer to the nearest tenth of a foot.

Enter your answer in the box.

 feet

Part B

What is the area of the plot of land that does **not** include the warehouse and the parking area?

Enter your answer in the box.

 square feet

Part C

Luke is planning to put a fence along two interior sides of the parking area. The sides are represented in the plan by the legs of the trapezoid. What is the total length of fence needed?

Express your answer to the nearest tenth of a foot.

Enter your answer in the box.

 feet

Part D

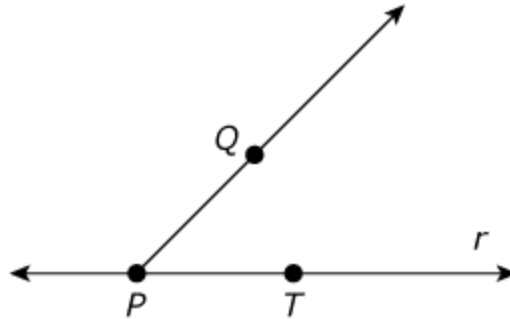
In the future, Luke has plans to construct a circular storage bin centered at coordinates (50, 40) on the plan. Which of the listed measurements could be the diameter of the bin that will fit on the plot and be **at least** 2 feet away from the warehouse?

Select **all** that apply.

- A. 10 feet B. 15 feet C. 18 feet
 D. 22 feet E. 25 feet

Calculator Part (continued)

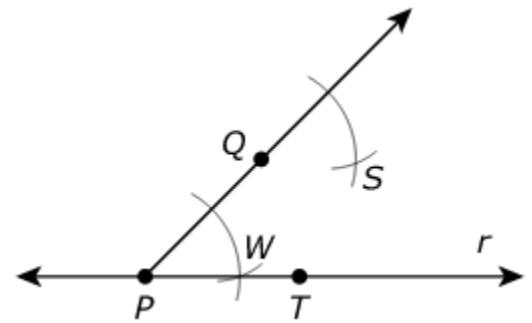
25. The figure shows line r , points P and T on line r , and point Q not on line r . Also shown is ray PQ .



Part A

Consider the partial construction of a line parallel to r through point Q . What would be the final step in the construction?

- A. draw a line through P and S
- B. draw a line through Q and S
- C. draw a line through T and S
- D. draw a line through W and S



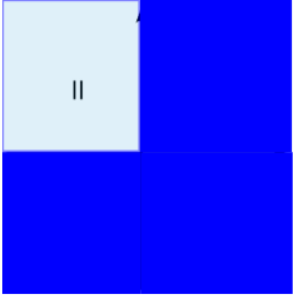
Part B

Once the construction is complete, which of the reasons listed contribute to proving the validity of the construction?

- A. When two lines are cut by a transversal and the corresponding angles are congruent, the lines are parallel.
- B. When two lines are cut by a transversal and the vertical angles are congruent, the lines are parallel.
- C. Definition of a segment bisector
- D. Definition of an angle bisector

Item Number	Answer Key	Evidence Statement Keys										
Part 1: Non-Calculator												
1	15	G-SRT.5										
2	B	G-CO.3										
3	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Subtended Central Angle</th> <th>Arc Length</th> </tr> </thead> <tbody> <tr> <td>$\angle AFB$</td> <td>2π</td> </tr> <tr> <td>$\angle BFC$</td> <td>$\frac{3\pi}{4}$</td> </tr> <tr> <td>$\angle CFD$</td> <td>$\frac{\pi}{2}$</td> </tr> <tr> <td>$\angle AFE$</td> <td>π</td> </tr> </tbody> </table>	Subtended Central Angle	Arc Length	$\angle AFB$	2π	$\angle BFC$	$\frac{3\pi}{4}$	$\angle CFD$	$\frac{\pi}{2}$	$\angle AFE$	π	G-C.B.Int.1
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4	C	G-GMD.4										
5		G-GPE.6										
6	Part A: -1 Part B: 44	G-GPE.1-2										
7	The triangles are similar because $\triangle DEF$ is the image of $\triangle ABC$ under a dilation with center <input type="text" value="(-2, -1)"/> and scale factor <input type="text" value="2"/> .	G-SRT.2										

Part 2: Calculator																							
1	46	G-C.A.Int.1																					
2	B, F	G-CO.1																					
3	C	G-SRT.7-2																					
4	<table border="1"> <thead> <tr> <th></th> <th>The coordinates of A'</th> <th>The coordinates of C'</th> <th>The perimeter of $\triangle A'B'C'$</th> <th>The area of $\triangle A'B'C'$</th> <th>The measure of $\angle B'$</th> <th>The slope of $A'C'$</th> </tr> </thead> <tbody> <tr> <td>Will be the Same</td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input checked="" type="radio"/></td> </tr> <tr> <td>Will Not be the Same</td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>		The coordinates of A'	The coordinates of C'	The perimeter of $\triangle A'B'C'$	The area of $\triangle A'B'C'$	The measure of $\angle B'$	The slope of $A'C'$	Will be the Same	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Will Not be the Same	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	G-CO.6
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5	D	G-SRT.5																					
6	<p>Use the choices in the drop-down menus to complete the sentence.</p> <p>Line $A'C'$ will be <input type="text" value="parallel to"/> \overleftrightarrow{AC} and line $P'Q'$ will be <input type="text" value="the same line as"/> \overleftrightarrow{PQ}.</p>	G-SRT.1a																					
7	<p><input type="text" value="(x-4)"/> $)^2 + y^2 =$ <input type="text" value="25"/></p>	G-GPE.1-2																					
8	B	G-GMD.3																					
9	<p>The scale factor is <input type="text" value="0.5"/> and the center of dilation is at <input type="text" value="(0, 0)"/>.</p>	G-SRT.1b																					
10	<p>When the probe reaches the ocean floor, the probe will be approximately <input type="text" value="3,600"/> meters below the ocean surface. When the probe reaches the ocean floor, the horizontal distance of the probe behind the team's ship on the ocean surface will be approximately <input type="text" value="1,500"/> meters.</p>	G-SRT.8																					
11	B, F	G-GMD.1																					
12	C	G-CO.6																					
13	<p>Part A: 113 Part B:</p> <p>The perimeter of the screen is approximately <input type="text" value="102"/> inches, and the area of the screen is <input type="text" value="648"/> square inches.</p>	G-Int.1																					

14	<p>Part A</p>  <p>Part B (3,-2)</p>	G-CO.5
15	<p>Part A : 1326 Part B : B</p>	G-Int.1
16	<p>Part A: 2000 Part B: 1732 Part C: B Part D: C</p>	G-SRT.8
17	<p>Part A: 36 Part B:</p> <p>The length of \overline{CD} is <input type="text" value="greater than 10"/> because <input type="text" value="m∠CPD > 60°"/>.</p>	G-C.A.Int.1
18	<p>Part A : B Part B:</p> <p>The construction creates congruent triangles. Triangle ABD and $\triangle ACD$ are congruent because of the <input type="text" value="side, side, side"/> theorem. It follows that \overrightarrow{AD} must be the angle bisector of $\angle BAC$ because <input type="text" value="∠BAD ≅ ∠CAD"/>.</p>	G-CO.D
19	<p>Part A: B Part B: A Part C: C Part D: C</p>	G-CO.C
20	<p>Part A: 3.4 Part B: C</p>	G-SRT.8
21	<p>Part A: B, D Part B: 3</p>	G-CO.5

22	<p>Part A:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Statements</th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">$AD > CD$</td> <td style="text-align: center;"><input type="button" value="Sometimes True"/></td> </tr> <tr> <td style="text-align: center;">$m\angle CBD = \frac{1}{2}(m\angle CAD)$</td> <td style="text-align: center;"><input type="button" value="Never True"/></td> </tr> <tr> <td style="text-align: center;">$m\angle CBD = 90^\circ$</td> <td style="text-align: center;"><input type="button" value="Sometimes True"/></td> </tr> <tr> <td style="text-align: center;">$m\angle ABD = 2(m\angle CBD)$</td> <td style="text-align: center;"><input type="button" value="Sometimes True"/></td> </tr> </tbody> </table> <p>Part B: B</p>	Statements		$AD > CD$	<input type="button" value="Sometimes True"/>	$m\angle CBD = \frac{1}{2}(m\angle CAD)$	<input type="button" value="Never True"/>	$m\angle CBD = 90^\circ$	<input type="button" value="Sometimes True"/>	$m\angle ABD = 2(m\angle CBD)$	<input type="button" value="Sometimes True"/>	G-C.A.Int.1
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24	<p>Part A: 243.2 Part B: 1740 Part C: 42.8 Part D: A, B, C</p>	G-Int.1										
25	<p>Part A: B Part B: A</p>	G-CO.D										