GSE Geometry | Unit 1 - Transformations | EOC Review

Name: _____ Block: _____

Vocabulary: Translations, Dilations, Reflections, Rotations, and Isometric.

1) Translate the following points by the rule: $(x,y) \rightarrow (x+1, y-4)$

S (-5, 2)→ (-4, -2)

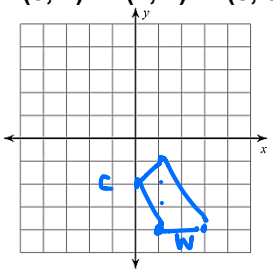
Y (-4, 5)→ (-3, 1)

R (-1, 1)→ (0, -3)

A (-4, -2)→ (-3, -6)

2) Translation: (x, y) → (x – 2, y – 6)

W(3, 2) C(2, 4) T(3, 5) Z(5,2)



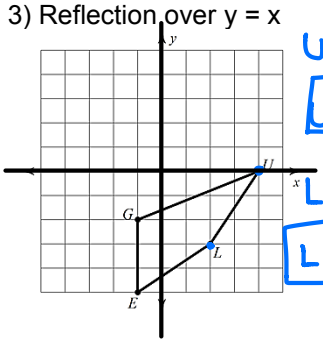
W'(1, -4)

C'(0, -2)

T'(1, -1)

Z'(3, -4)

3) Reflection over y = x



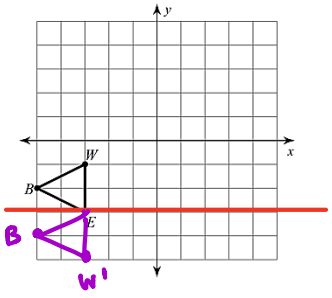
U(4, 0)

U'(0, 4)

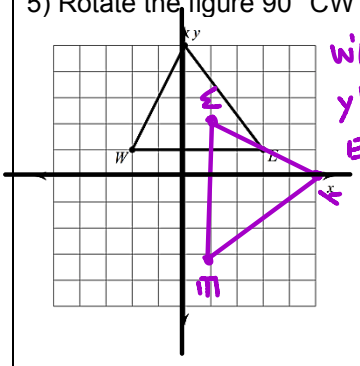
L(2, -3)

L'(-3, 2)

4) Reflection over y = -3



5) Rotate the figure 90° CW

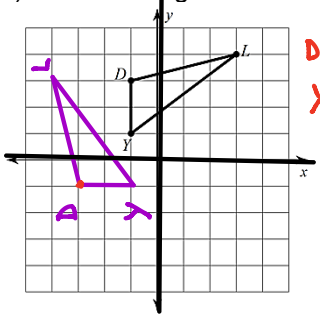


W'(1, 2)

Y'(5, 0)

E'(1, -3)

6) Rotate the figure 90° CCW



D'(-3, -1)

Y'(-1, -1)

L'(-4, 3)

7) Find the coordinates of the new vertices of the image that has been dilated by a factor of 5. K=5

S(-5, 2)→ S'(-25, 10)

Y (-4, 5)→ Y'(-20, 25)

R (-1, 1)→ R'(-5, 5)

A (-4, -2)→ A'(-20, -10)

8) Find the coordinates of the new vertices of the image that has been dilated by a factor of 1/2 K=1/2

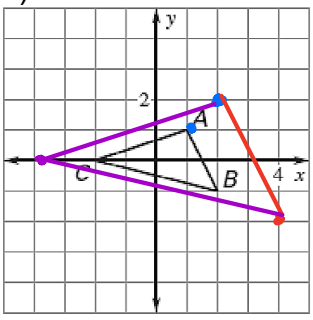
W(3, 2)→ W'(1.5, 1)

C(2, 4)→ C'(1, 2)

T (3, 5)→ T'(1.5, 2.5)

Z (5, 2)→ Z'(2.5, 1)

9) Draw a dilation with k = 2



A(1, 1)

C(2, 2)

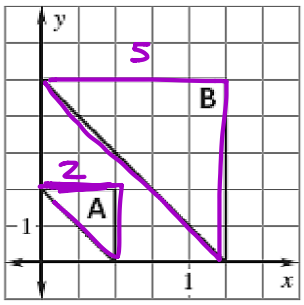
B(2, -1)

D'(4, -2)

C(-2, 0)

C'(-4, 0)

10) Determine the scale factor k = 2.5 5/2



11) Given the points

M (-3, 1) S (5, -2)

→ Translate: (x – 3, y + 2)

→ Reflect: y = x

M' → (-2, 1)

M'' → (-6, 3)

S' → (2, 0)

S'' → (0, 2)

(3, -6)

(5, -2)

12) Given the points

K (0, -4) P (-6, -3) R (1, 2)

Reflect: over the x-axis

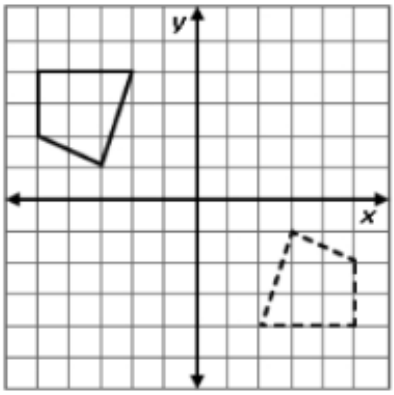
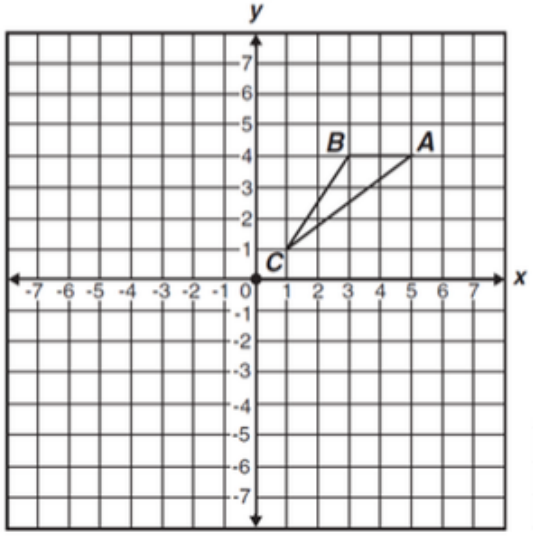
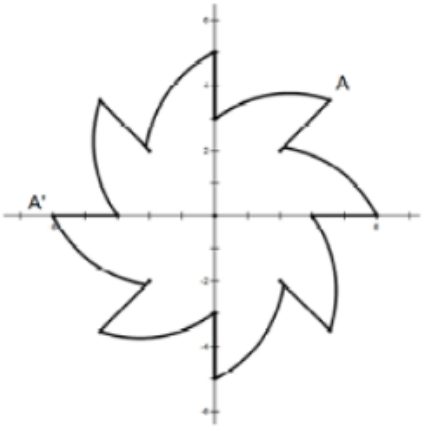
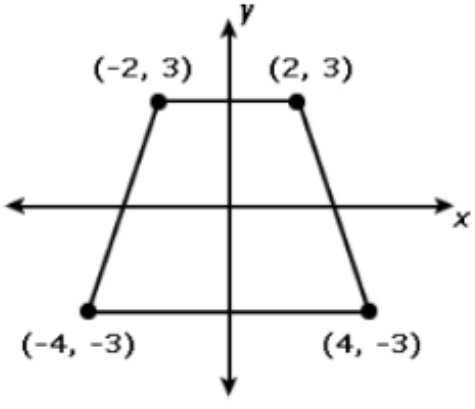
Rotate: 270 CCW

(y, -x)

K' → (0, 4) K'' → (4, 0)

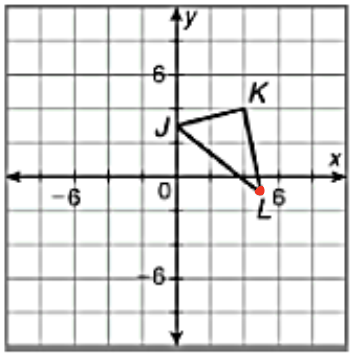
P' → (-6, 3) P'' → (3, 6)

R' → (1, -2) R'' → (-2, -1)

	Answers
1) Which transformation maps the solid figure onto the dashed figure? A. rotation 180 about the origin B. translation to the right and down C. reflection across the x-axis D. reflection across the y-axis 	1) _____
2) If triangle ABC is rotated 180 degrees about the origin, what are the coordinates of A'? A. (-5,-4) B. (-5,4) C. (-4,5) D. (-4,-5) 	2) _____
3) Determine the angle of rotation for A to map onto A'? A. 45 B. 90 C. 135 D. 180 	3) _____
4) Which transformation will place the trapezoid onto itself? A. counterclockwise rotation about the origin by 90 B. rotation about the origin by 180 C. reflection across the x-axis D. reflection across the y-axis 	4) _____

5) ΔJKL is rotated 90 about the origin and then translated using $(x, y) \rightarrow (x - 8, y + 5)$. What are the coordiantes of the final image of L? The coordinates for ΔJKL are J(5,-1), K(4,4), and J(9,3).

A. (-7,10)
B. (-7,0)
C. (-9,10)
D. (-9,0)



L(5,-1)

Answers

5) _____

6) Which figure has 90 rotational symmetry?

A. square
B. regular hexagon
C. regular pentagon
D. equilateral triangle

6) _____

7) Point P is located at (4,8) on a coordinate plane. Point P will be relfected over y = x. What will bee the coordiantes of the image of point P?

A. (28,4)
B. 24,8)
C. (4,28)
D. (8,4)

7) _____

8) Point F' is the image when point F is reflected over the line $x = -2$ and then over the line $y = 3$. The location of F' is (3,7). Which of the following is the location of point F?

A. (-7,-1)
B. (-7,7)
C. (1,5)
D. (1,7)

8) _____

9) A triangle has vertices at A(-3,-1), B(-6,-5), C(-1,-4). Which tranformation would produce an image with vertices A'(3,-1), B'(6,-5), C'(1,-4)?

A. A relfection over the x-axis
B. A relfection over the y-axis
C. A rotation 99 clockwise
D. A rotation 90 counterclockwise

9) _____

10) The vertices of ΔJKL have coordinates J(5,1), K(-2,-3), and L(-4,1). Under which tranformation is the image $\Delta J'K'L'$ NOT congrunet to ΔJKL?

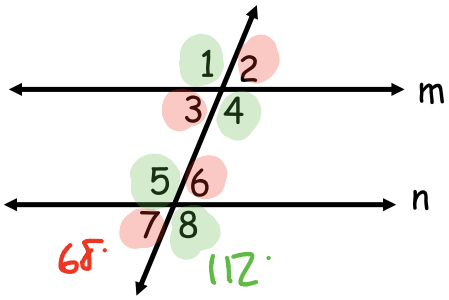
A. A translation of two units to the right and two units down
B. A counterclockwise rotation of 180 degrees aound the origin
C. A reflection over the x-axis
D. A dilation with a scale factor of 2 centered at the origin

10) _____

GSE Geometry | Unit 2 – Triangles and Quadrilaterals | EOC Review

Name: _____ Block: _____

Vocabulary: Supplementary, complementary, vertical, same side interior, same side exterior, alternate interior, alternate exterior, corresponding, triangle, quadrilateral, and parallelogram.



180 - 112 = 68

1) Name the angles listed and the special property.

∠1 and ∠5 corresponding

∠4 and ∠6 S.S. interior

∠2 and ∠8 S.S. exterior

∠4 and ∠5 alt interior

2) Given m||n and m∠8, find the measures of all the numbered angles in the figure.

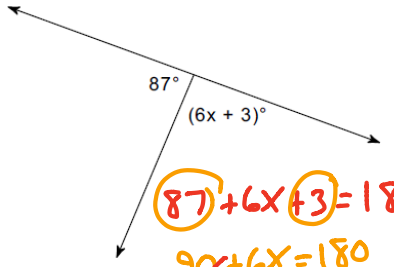
m∠1 = 112° m∠2 = 68°

m∠3 = 68° m∠4 = 112°

m∠5 = 112° m∠6 = 68°

m∠7 = 68° m∠8 = 112

3) Solve for x.



87 + 6x + 3 = 180

90 + 6x = 180

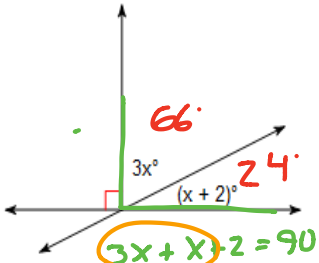
-90 -90

6x = 90

6 6

x = 15

4) Solve for x.



3x + x + 2 = 90

4x + 2 = 90

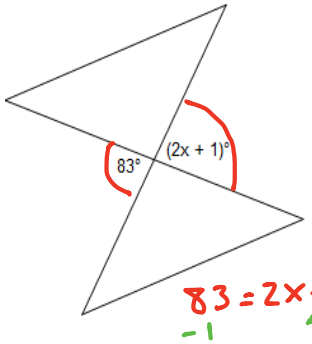
-2 -2

4x = 88

4 4

x = 22

5) Solve for x.



83 = 2x + 1

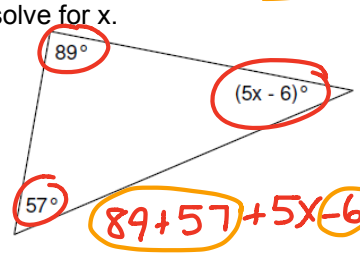
-1 -1

82 = 2x

2 2

x = 41

6) solve for x.



89 + 57 + 5x - 6 = 180

140 + 5x = 180

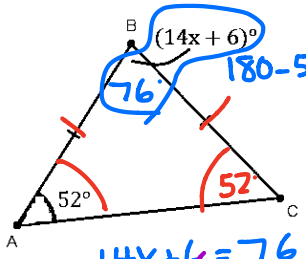
-140 -140

5x = 40

5 5

x = 8

7) Solve for x.



180 - 52 - 52 = 76

14x + 6 = 76

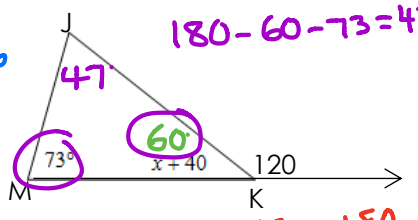
-6 -6

14x = 70

14 14

x = 5

8) Solve for x and $m\angle J$



180 - 60 - 73 = 47

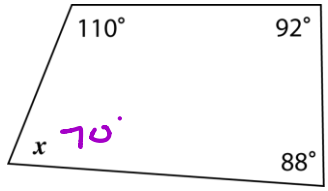
x + 40 + 120 = 180

x + 160 = 180

-160 -160

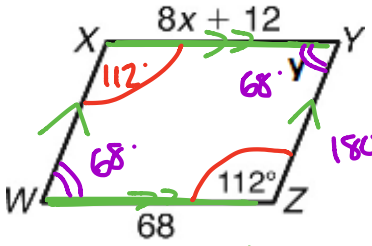
x = 20

9. Solve for x.



360 - 110 - 92 - 88 = 70

10) Find x and y.



180 - 112

8x + 12 = 68

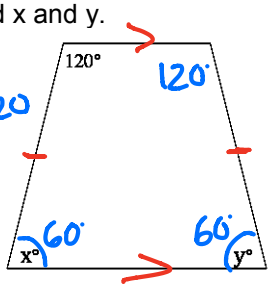
-12 -12

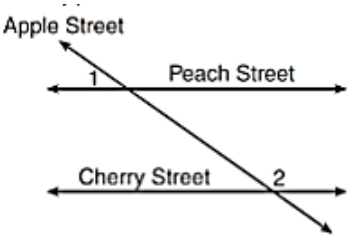
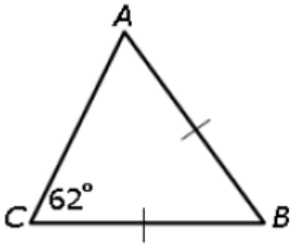
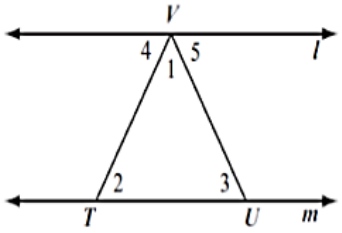
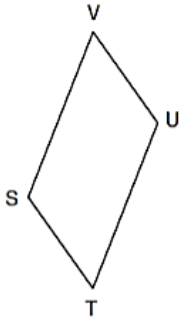
8x = 56

8 8

x = 7

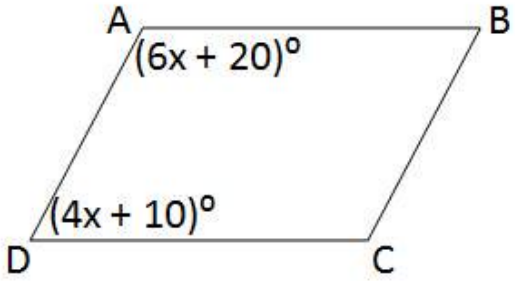
11) Find x and y.



	Answers
1) Peach Street and Cherry Street are parallel. Apple Street intersects them, as shown in the diagram below. If $m\angle 1 = 2x + 36$ and $m\angle 2 = 7x - 9$, wjat is $m\angle 1$? A. 9 B. 17 C. 54 D. 70 	1) _____
2) What is the measure of $\angle B$ in the figure below? A. 62 B. 58 C. 59 D. 56 	2) _____
3) In this figure, *l* || *m*. Jessie listed the first two steps in a proof that $\angle 1 + \angle 2 + \angle 3 = 180^o$. Which justification can Jessie give for step 1 and 2? A. Alternate interior angles are congruent. B. Corresponding anlges are congruent. C. Vertical angles are congruent. D. Alternate exterior angles are congruent.  | | Step | Justification | |---|---|---| | 1 | $\angle 2 \cong \angle 4$ | ? | | 2 | $\angle 3 \cong \angle 5$ | ? |	3) _____
4) In the diagram below of parallelogram STUV, $SV = x + 3, VU = 2x - 1, and\ TU = 4x - 3$. What is the length of $\overline{SV}$? A. 2 B. 4 C. 5 D. 7 	4) _____

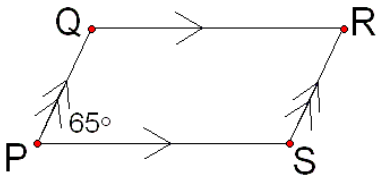
5) In parallelogram ABCD, find m∠A.

A. 15°
B. 70°
C. 110°
D. 200°



5) _____

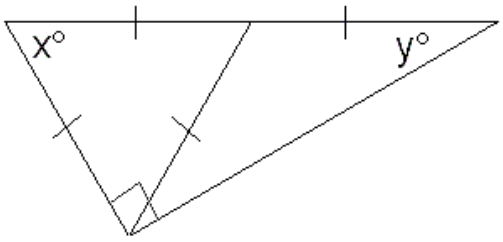
6) What reason explains why the m∠Q = 115°?



A) diagonals of a parallelogram bisect each other
B) opposite sides of a parallelogram are congruent
C) opposite angles of a parallelogram are congruent
D) consecutive angles of a parallelogram are supplementary

6) _____

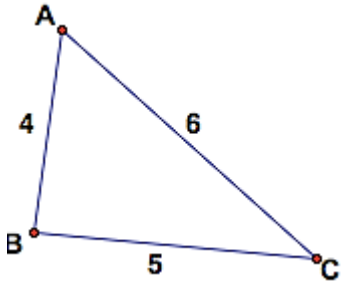
7) Find x and y in the diagram.



A) x = 60, y = 30
B) x = 45, y = 60
C) x = 30, y = 60
D) x = 60, y = 120

7) _____

8) List the angles of the triangle in order from SMALLEST to LARGEST.



A) ∠C, ∠B, ∠A
B) ∠A, ∠B, ∠C
C) ∠C, ∠A, ∠B
D) ∠B, ∠C, ∠A

8) _____

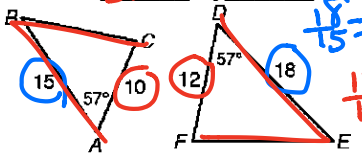
GSE Geometry Unit 2 – Similarity, Congruence, and Proofs EOC Review

Name: _____ Block: 1

Vocabulary: SSS, SAS, ASA, AAS, HL, CPCTC, Reflexive Property, Definition of a Midpoint, Midsegment.

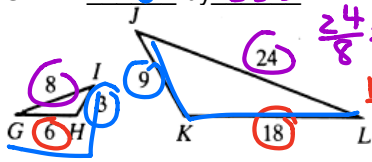
Determine if the following triangles are similar. (SSS, AA, SAS, None)

1) △ABC ~ DEF by SAS



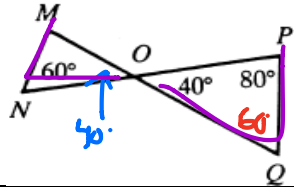
$\frac{18}{15}=1.2$ $\frac{12}{10}=1.2$

2) △GHI ~ LKJ by SSS



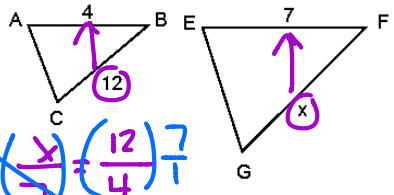
$\frac{24}{8}=3$ $\frac{18}{6}=3$ $\frac{9}{3}=3$

3) △MNO ~ PQO by AA



180-40-80

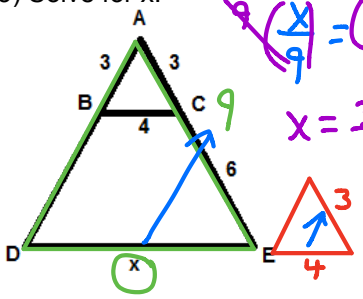
4) Solve for x.



$\frac{x}{7}=\frac{12}{4}=\frac{7}{1}$

$x=\frac{84}{4}=21$

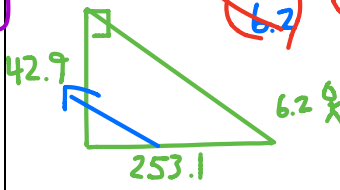
5) Solve for x.



$\frac{x}{9}=\frac{4}{3}=\frac{9}{1}$

$x=\frac{36}{3}=12$

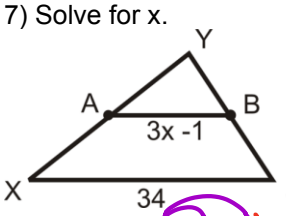
6) If a 42.9 ft tall flagpole casts a 253.1 ft long shadow, then how long is the shadow that a 6.2 ft. tall woman casts?



$\frac{x}{6.2}=\frac{253.1}{42.9}$ 6.2

$x=36.6$

7) Solve for x.



$2(3x-1)=34$

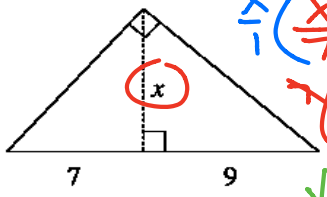
$6x-2=34$

$+2 \quad +2$

$\frac{6x}{6}=\frac{36}{6}$

$x=6$

8) Solve for x.

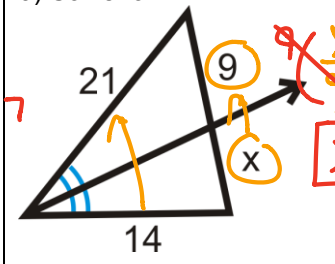


$\frac{x}{7}=\frac{9}{x}$

$x^2=63$

$x=8$

9) Solve for x.

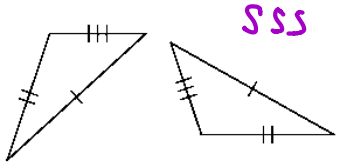


$\frac{x}{9}=\frac{14}{21}$ 9

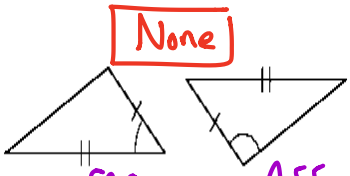
$x=6$

Determine if the following triangles are congruent. (SSS, SAS, ASA, AAS, HL, None)

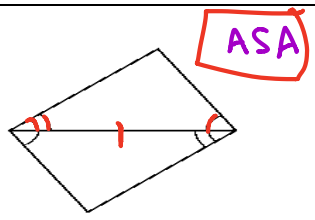
10) SSS



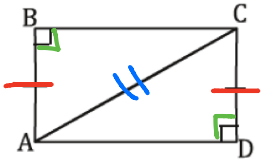
11) None



12) ASA

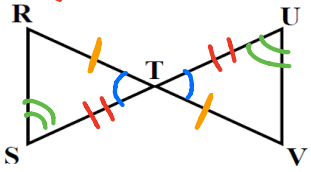


13) Given: $\overline{AB} \cong \overline{DC}$ Prove: $\Delta ABC \cong \Delta CDA$



Statements	Reasons
1. $\overline{AB} \cong \overline{DC}$	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive
3. ∠ABC & ∠CDA are right angles.	3. Given
4. ∠ABC ≅ ∠CDA	4. all right angles are congruent
5. ΔABC ≅ ΔCDA	5. HL

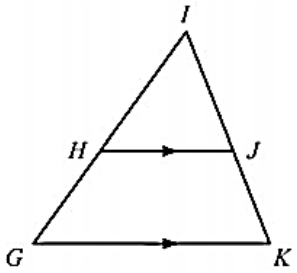
14) Given: $\overline{RT} \cong \overline{TV}$ $\overline{ST} \cong \overline{TU}$ Prove: ∠TSR ≅ ∠TUV



Statements	Reasons
1. $\overline{RT} \cong \overline{TV}$	1. Given
2. $\overline{ST} \cong \overline{TU}$	2. Given
3. ∠RTS ≅ ∠VTU	3. Vertical
4. ΔRTS ≅ ΔVTU	4. SAS
5. ∠TSR ≅ ∠TUV	5. CPCTC

Answers

1) Use this triangle to answer the question.



This is a proof of the statement "If a line is parallel to one side of a triangle and intersecrts the other two sides at distinct points, then it seperates these sides into segments of proportional lengths."

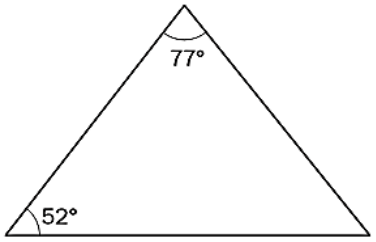
Step	Statement	Justification
1	$\overline{GK}$ is parallel to $\overline{HJ}$.	Given
2	$\angle HGK \cong \angle IHJ$ $\angle IKG \cong \angle IJH$	?
3	$\triangle GIK \sim \triangle HIJ$	AA Similarity
4	$\frac{IG}{IH} = \frac{IK}{IJ}$	Corresponding sides of similar triangles are proportional.
5	$\frac{HG + IH}{IH} = \frac{JK + IJ}{IJ}$	Segment Addition Postulate
6	$\frac{HG}{IH} = \frac{JK}{IJ}$	Subtraction Property of Equality

Which reason justifies step 2?

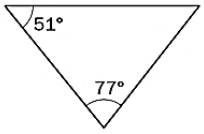
A. Alternate interior angles are congruent.
B. Alternate exterior agnler are congruent.
C. Corresponding angles are congruent.
D. Vertical angles are congruent.

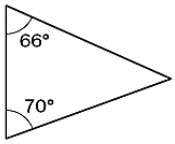
1) _____

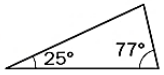
2) Look at the triangle.

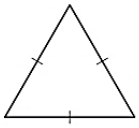


Which triangle is similar to the given triangle?

A.


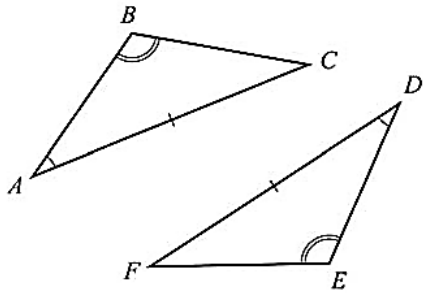
B.


C.


D.


2) _____

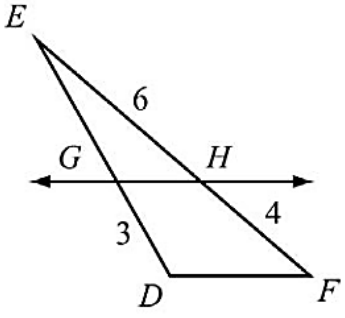
3) Which can be used to prove the triangles are congrunet?



A. SSS
B. ASA
C. SAS
D. AAS

3) _____

4) In the triangle shown, GH || DF.

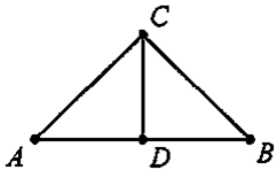


What is the legnth of GE?

A. 2.0
B. 4.5
C. 7.5
D. 8.0

4) _____

5) In the disgram, CD is the perpendicular disector of AB. The two-column proof shows that AC is congruent to BC.

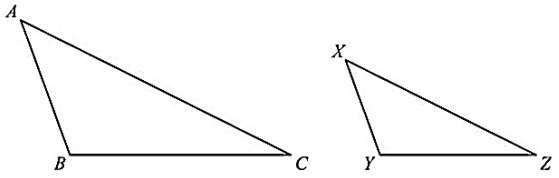


Step	Statement	Justification
1	$\overline{CD}$ is the perpendicular bisector of $\overline{AB}$.	Given
2	$\overline{AD} \cong \overline{BD}$	Definition of bisector
3	$\overline{CD} \cong \overline{CD}$	Reflexive Property of Congruence
4	$\angle ADC$ and $\angle BDC$ are right angles.	Definition of perpendicular lines
5	$\angle ADC \cong \angle BDC$	All right angles are congruent.
6	$\triangle ADC \cong \triangle BDC$	_____ ? _____
7	$\overline{AC} \cong \overline{BC}$	CPCTC

Which of the following would justify step 6?

A. ASS
B. ASA
C. SAS
D. SSS

6) In the triangles shown, $\triangle ABC$ is dilated by a factor of $\frac{2}{3}$ to form $\triangle XYZ$.



Given that $m\angle A = 50^o and\ m\angle B = 100^o$, what is $m\angle Z$?

A. 15
B. 25
C. 30
D. 50

5) _____

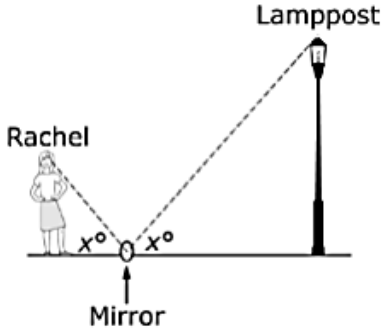
6) _____

7. Given the diagram below, what is the value of x?

A. 13.5
B. 14.6
C. 15.5
D. 16.6

7) _____

8. To find the height of a lamppost at a park, Rachel placed a mirror on the ground 20 feet from the base of the mappost. She then stepped back 4 feet so that she could see thee top of the lamppost in the center of the mrror. Rachel's eyes are 5 feet and 6 inches above the ground. What is the height, in feet, of the lamppost?



8) _____

Sine θ = opposite hypotenuse

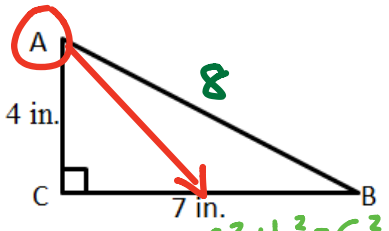
GSE Geometry Unit 3 – Right Triangles EOC Review

Name: _____ Block: _____

Vocabulary: Sine, cosine, tangent, complements

cosine θ = adjacent / hypotenuse

tangent θ = opposite / adjacent



$a^2+b^2=c^2$

$4^2+7^2=c^2$

$16+49=c^2$

$\sqrt{65}=\sqrt{c^2}$

$c=8$

1) Find sin A= $\frac{7}{8}$

2) Find tan B= $\frac{4}{7}$

3) Find cos B= $\frac{7}{8}$

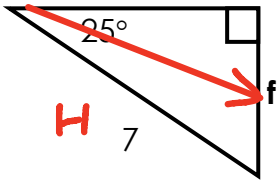
4) Find tan A= $\frac{7}{4}$

5) $sin75^o = cos$ 15 (90-75)

6) $cos40^o = sin$ 50°

7) $cos54^0 = cos$ 54°

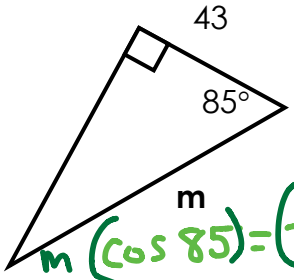
8) Find f.



$7 \cdot \sin 25° = \frac{f}{7}$

$f=3$

9) Find m.



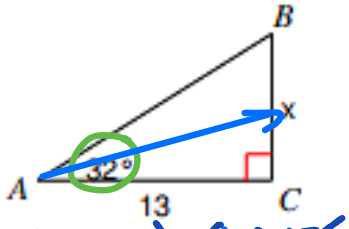
$m(\cos 85) = \frac{43}{m}$

$m \cdot \cos 85 = 43$

$\frac{m \cdot \cos 85}{\cos 85} = \frac{43}{\cos 85}$

$m=493.4$

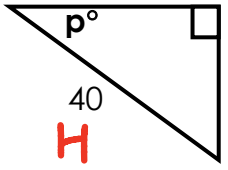
10) Find x.



$13(\tan 32) = \frac{x}{13}$

$x=8$

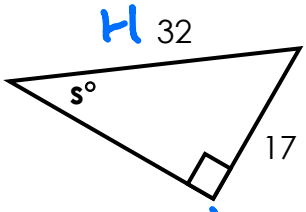
11) Find angle P.



$\sin^{-1}\left(\frac{13}{40}\right) = P$

$P=19°$

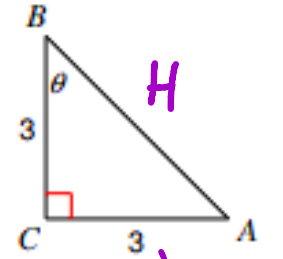
12) Find s.



$\sin^{-1}\left(\frac{17}{32}\right) = s$

$s=32°$

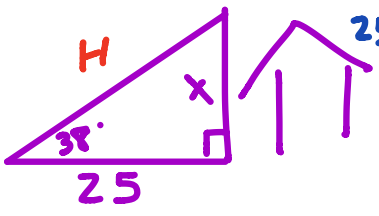
13) Solve for theta.



$\tan^{-1}\left(\frac{3}{3}\right) = \theta$

$\theta=45°$

14) From 25 feet away from the base of a building, the angle of elevation from the ground to the top of a building is measured to be 38°. How tall is the building?

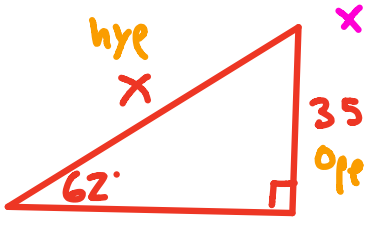


$25(\tan 38) = \frac{x}{25}$

$25 \cdot \tan 38 = x$

$x=20$

15) A kite is 35 feet in the air and the string forms an angle of 62° with the ground. How long is the string?

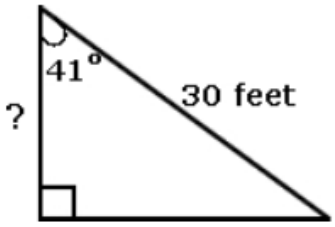
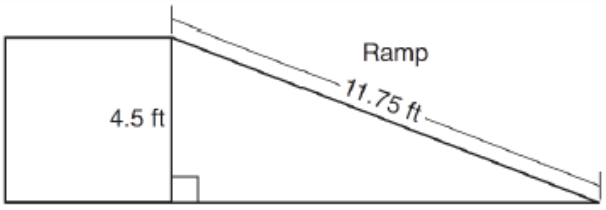
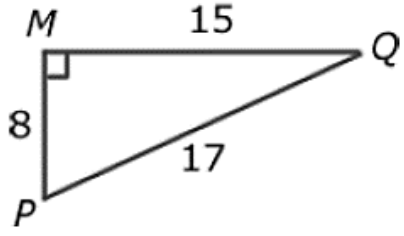


$x(\sin 62) = \frac{35}{x}$

$x \cdot \sin 62 = 35$

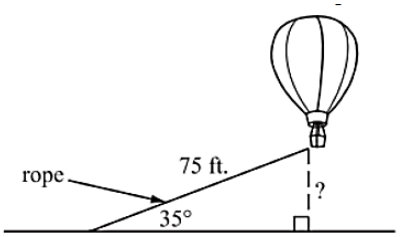
$\frac{x \cdot \sin 62}{\sin 62} = \frac{35}{\sin 62}$

$x=40$

	Answers
1) A 30-foot long escalator forms a 41° angle at the second floor. Which is the closest height of the first floor? A. 20 feet B. 22.5 feet C. 24.5 feet D. 26 feet 	1) _____
2) The diagram below shows a ramp connecting the ground to a loading platform 4.5 feet above the ground. The ramp measures 11.75 feet from the ground to the top of the loading platform. Find the angle of elevation. 	2) _____
3) What is the sine ratio of $\angle P$ in the given triangle? A. $\frac{8}{17}$ B. $\frac{8}{15}$ C. $\frac{15}{17}$ D. $\frac{15}{8}$ 	3) _____
4) Which is equal to sin 30°? A. cos 30° B. cos 60° C. sin 60° D. sin 70°	4) _____

5) A rope is tied to the bottom of a hot air balloon as shown below. The rope makes an angle of 35 with the ground and is 75 ft. long. How far is the bottom of the balloon from the ground to the nearest foot?

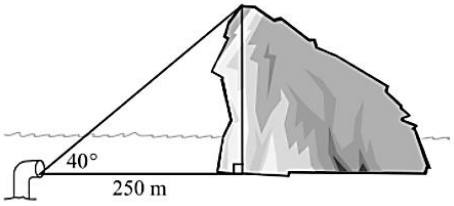
5) _____



A. 43 ft.
B. 53 ft.
C. 61 ft.
D. 131 ft.

6) The captain of a submarine views an iceberg from his periscope, as shown in the figure below. What is the height of the iceberg to the nearest meter?

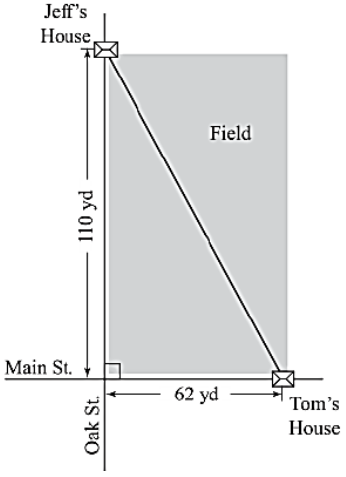
6) _____



A. 161 m
B. 192 m
C. 210 m
D. 298 m

7) Jeff lives on Oak Street, and Tom lives on Main Street. How much farther, to the nearest yard, is it for Tom to walk down Main Street and turn on Oak Street

7) _____

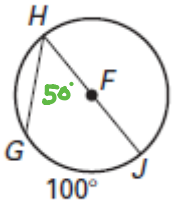
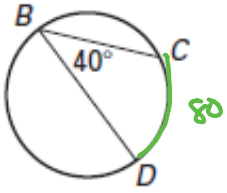
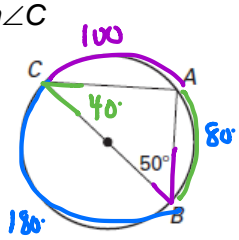
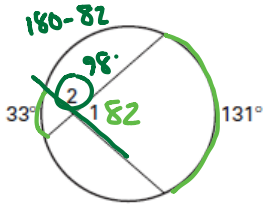
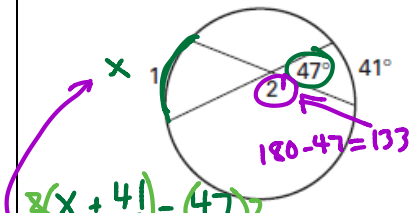
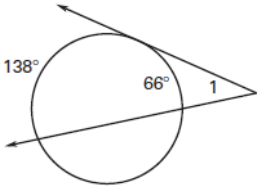
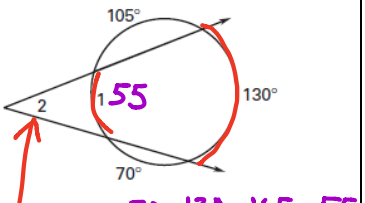
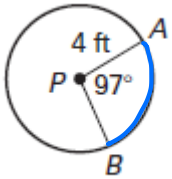
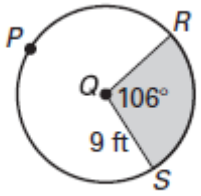
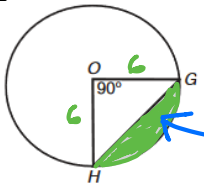


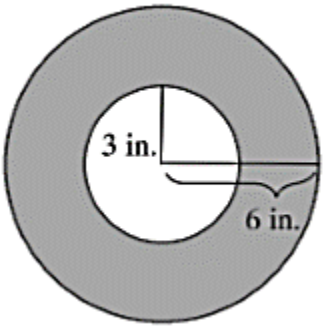
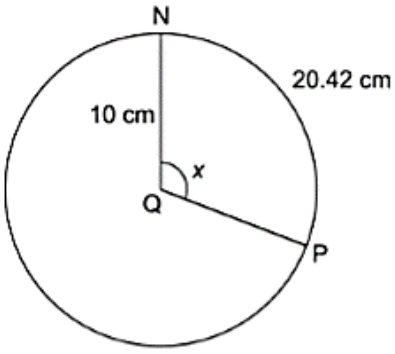
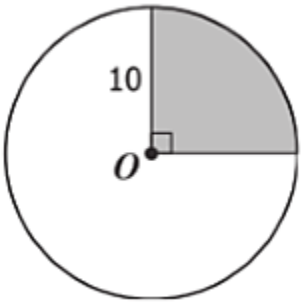
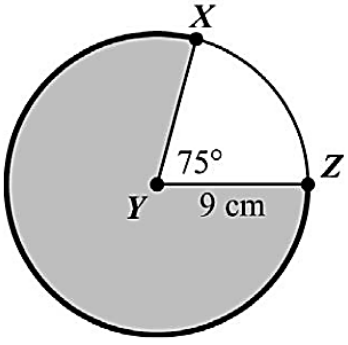
A. 46 yd
B. 48 yd
C. 126 yd
D. 172 yd

GSE Geometry | Unit 4 – Circles, Angles, and Area | EOC Review

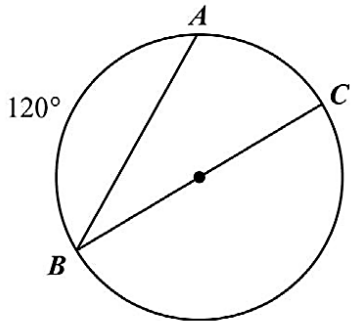
Name: _____ Block: _____

Vocabulary: Sine, cosine, tangent, complements

1) Find $m\angle GHJ$ 	2) Find mCD 	3) Find $m\angle C$ 
4) Find $m\angle 1$ and $m\angle 2$  $\frac{33+131}{2} = 82$	5) Find 1 & 2  $\frac{x+41}{2} = 47$ $x+41 = 94$ $-41 \quad -41$ $x = 53°$	6) Find 1.  $\frac{138-66}{2} = 36°$
7) Find 1 & 2.  $360-70-130-165=55$ $\frac{130-55}{2} = 37.5$	8) Find the area of a circle with a diameter of 22 inches. $r = 11$ $A = \pi r^2$ $= \pi(11)^2$ $= 121\pi \approx 380.1$	9) The circumference of a circle is 25.12 ft. What is the radius? $C = 25.12$ $C = 2\pi r$ $\frac{25.12}{2\pi} = \frac{2\pi r}{2\pi}$ $r = 4$
10) Find the arc length of AB  $AL = \frac{2\pi r\theta}{360} = \frac{2\pi(4)(97)}{360}$ $= \frac{97}{45}\pi \approx 6.77$	11) Find the area of the shaded region  $AS = \frac{\pi r^2\theta}{360} = \frac{\pi(9)^2(106)}{360}$ $= \frac{477}{20}\pi \approx 74.9$	12) If the radius of the circle is 6 centimeters, what is the area of the shaded segment?  $AS = \frac{\pi r^2\theta}{360}$ $= \frac{\pi(6)^2(90)}{360}$ $= 9\pi$ $= 28.3$ $A = \frac{1}{2}b \cdot h$ $= \frac{1}{2}(6)(6)$ $= 18$ $28.3 - 18 = 10.3$

	Answers
1) An insulated foam sleeve is made to fit over water pipe. The distance from the center of the water pipe to the edge of the sleeve is 6 inches. The hole in the center has a radius of 3 inches. **What is the area of the face of the foam sleeve?** A. $9.42\ in^2$ B. $18.84\ in^2$ C. $84.78\ in^2$ D. $141.30\ in^2$ 	1) _____
2) This circle, with center point Q, has a radius of 10 centimeters. The length of the minor arc NP is 20.42 centimerters. To the nearest degree, **what is the value of x?** A. 110^o B. 117^o C. 204^o D. 233^o 	2) _____
3) Find the area of the shaded sector of circle O. A. 5π B. 20π C. 25π D. 50π 	3) _____
4) What is the area of the shaded part of the circle? A. $\frac{57}{4}\pi\ cm^2$ B. $\frac{135}{8}\pi\ cm^2$ C. $\frac{405}{8}\pi\ cm^2$ D. $\frac{513}{8}\pi\ cm^2$ 	4) _____

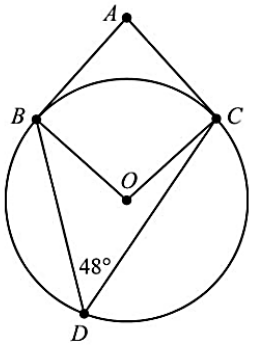
5) What is the measure of $\angle ABC$?



A. 15^o
B. 30^o
C. 60^o
D. 120^o

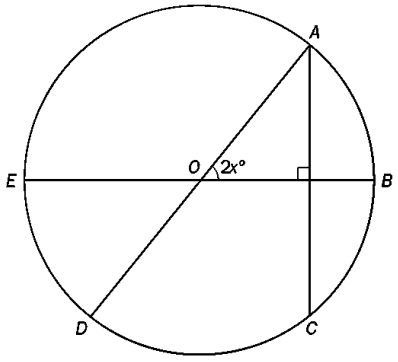
5) _____

6) In this circle, AB is tangent to the circle at point B, AC is tangetnt to the circle at point C, and point D lies on the circle. **What is the $m\angle BAC$?**



6) _____

7) The measure of $\widehat{CD}$ is 80^0. What is the value of x?



A. 50
B. 40
C. 35
D. 25

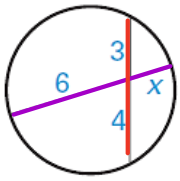
7) _____

GSE Geometry | Unit 4 – Segment Lengths and Volume | EOC Review

Name: _____ Block: _____

Vocabulary: Chord, tangent, volume, chevalier's principal, Pythagorean Theorem, cross section.

1) Find the value of x.

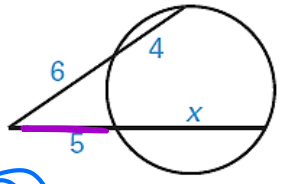


$x(6) = 3(4)$

$\frac{6x}{6} = \frac{12}{6}$

$x = 2$

2) Find the value of x.



$5(5+x) = 6(6+4)$

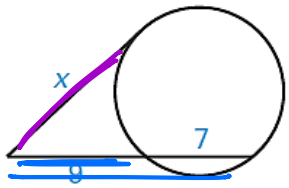
$25 + 5x = 60$

$-25 \quad -25$

$\frac{5x}{5} = \frac{35}{5}$

$x = 7$

3) Find the value of x.

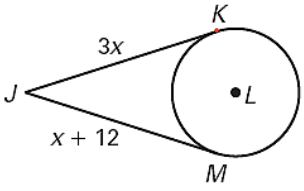


$x(x) = 9(9+7)$

$\sqrt{x^2} = \sqrt{144}$

$x = 12$

4) Find the value of x.



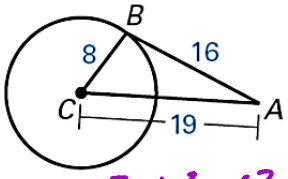
$3x = x + 12$

$-x \quad -x$

$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

5) Is $\overline{AB}$ **a tangent? Why or why not?**



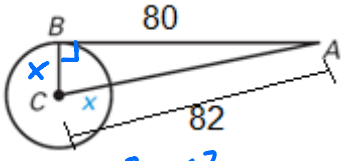
$a^2 + b^2 = c^2$

$8^2 + 16^2 = 19^2$

$320 \neq 361$

No

6) Find the value of x.



$a^2 + b^2 = c^2$

$x^2 + 80^2 = 82^2$

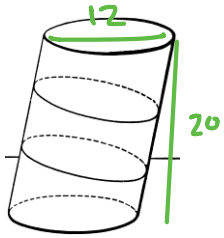
$x^2 + 6400 = 6724$

$-6400 \quad -6400$

$\sqrt{x^2} = \sqrt{324}$

$x = 18$

7) Find the volume of the figure with a diameter of 12 in and a height of 20 in.



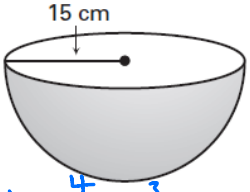
$V = \pi r^2 h$

$V = \pi(6)^2(20)$

$= 720\pi$

$\approx 2{,}262$

8) Find the volume of the hemisphere.



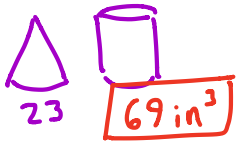
$V = \frac{4}{3}\pi r^3$

$= \frac{4}{3}\pi(15)^3$

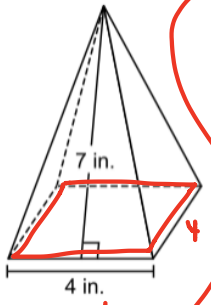
$= 4500\pi \div 2 = 2250\pi$

$\approx 14{,}137\ cm^3 \div 2 = 7069\ cm^3$

9) If the volume of a cone is 23 in^3, what is the volume of a cylinder with the same base area and height? Explain how you got to your answer?



10) Find the Volume of a square based pyramid.



$V = \frac{1}{3}B \cdot h$

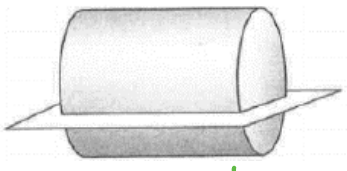
$V = \frac{1}{3}(16)(7)$

$V = 37.3\ in^3$

$A = b \cdot h$

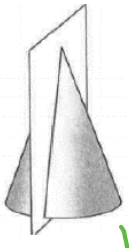
$= 16$

11) Name the cross section

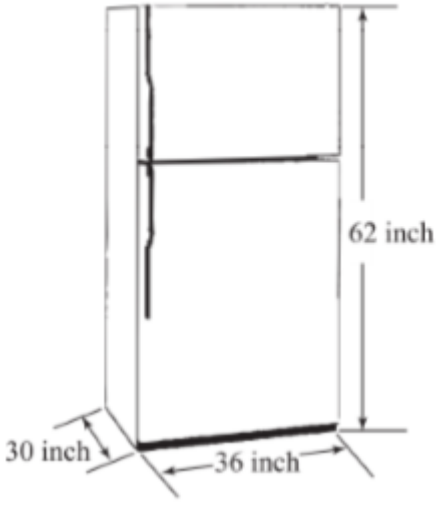


rectangle

12) Name the cross section

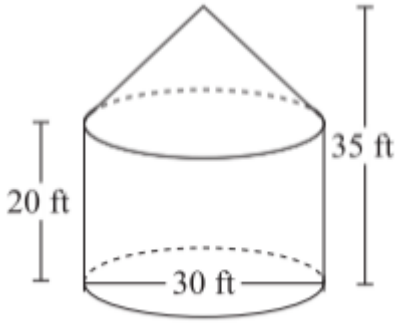


triangle

	Answers
1) What is the volume of a cylinder with a radius of 3 in. and a height of $\frac{9}{2}$ in.? A. $\frac{81}{2}\pi\ in^3$ B. $\frac{27}{4}\pi\ in^3$ C. $\frac{27}{8}\pi\ in^3$ D. $\frac{9}{4}\pi\ in^3$ $V = \pi r^2 h$	1) _____
2) A cereal box is 10.4 inches high, 7.4 inches long, and 2.3 inches wide. What is the volume of the cereal box rounded to the nearest cubic inch? A. 77 B. 140 C. 177 D. 236 $V = B \cdot h$ $V = L \cdot w \cdot h$	2) _____
3) Frances bought a new refrigerator to replace her old refrigerator shown below. Her new refrigerator has the same length and width as the old refrigerator but is 8 inches higher. How many more cubic inches of space are in Frances's new refrigerator compared to her old refrigerator? **Frances' Old Refrigerator**  A. 8,640 B. 14,880 C. 17,856 D. 25,440	3) _____

4) The grain bin below is made up of a cylinder with a cone on top. To the nearest cubic foot, how much grain will this bin hold?

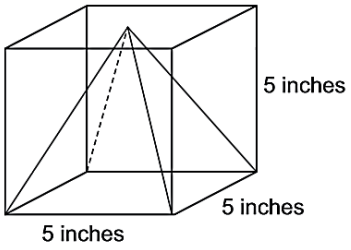
4) _____



A. $5{,}625\ cubic\ feet$
B. $17{,}663\ cubic\ feet$
C. $32{,}987\ cubic\ feet$
D. $70{,}650\ cubic\ feet$

5) A square pyramid is packaged inside a box. The space inside the box around the pyramid is then filled with protective foam. About how many cubic inches of foam is needed to fill the space around the pyramid?

5) _____

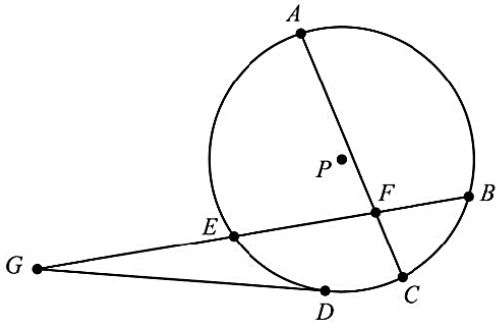


A. 8 cubic inches
B. 41 cubic inches
C. 83 cubic inches
D. 125 cubic inches

6) In circle P below, DG is tangent. $AF = 8$, $EF = 6$. $BF = 4$, and $EG = 8$. Find $\overline{CF}$ and $\overline{DG}$.

$\overline{CF} =$ ___

$\overline{DG} =$ ___

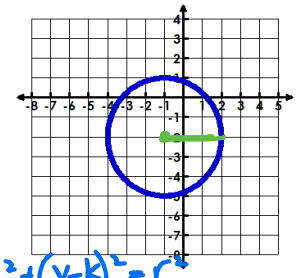


GSE Geometry Unit 5 – Geometric and Algebraic Connections EOC Review

Name: _____ Block: _____

Vocabulary: Midpoint, distance, partition, endpoint, circle

1) Write the equation of the circle in standard form



h k
(-1,-2)
r=3

$(x-h)^2+(y-k)^2=r^2$

$(x+1)^2+(y+2)^2=9$

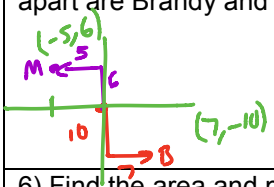
2) Find the midpoint of (5, 1) and (6, 7).

$\frac{11}{2}$ (5,1) (5.5,4) (6,7) $\frac{8}{2}$

3) Find the coordinates of the **other endpoint** of a segment with an endpoint of (-2, 2) and a midpoint (8, 3).

(-2,2) +10 +1 (8,3) +10 +1 (18,4)

4) Brandy and Mandy are in the pool playing a game of Marco Polo. Brandy swims 10 ft south and 7 ft east of base. Mandy swims 6 ft north and 5 ft west from where they started together in the middle of the pool. How far apart are Brandy and Mandy?



$=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$\sqrt{(-5-7)^2+(6+10)^2}$

$\sqrt{(-12)^2+(16)^2}$

$\sqrt{144+256}$

$\sqrt{400}$

20

5) Determine whether Point A (-5, 8) lies on the circle whose center is Point C (1, 2) and which contains the Point P (7, -4).

$d=\sqrt{(7-1)^2+(-4-2)^2}$

$=\sqrt{6^2+(-6)^2}$

$=\sqrt{72}$

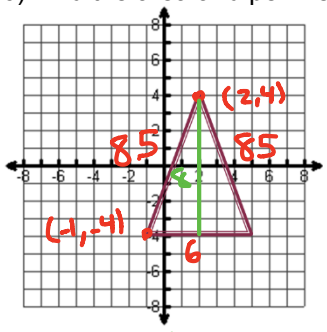
yes

$d=\sqrt{(1+5)^2+(2-8)^2}$

$\sqrt{(6)^2+(-6)^2}$

$\sqrt{72}$

6) Find the area and perimeter of the figure.



$d=\sqrt{(-1-2)^2+(-4-4)^2}$

$\sqrt{(-3)^2+(-8)^2}$

$\sqrt{9+64}$

$\sqrt{73}$

≈ 8.5

$P=8.5+8.5+6$

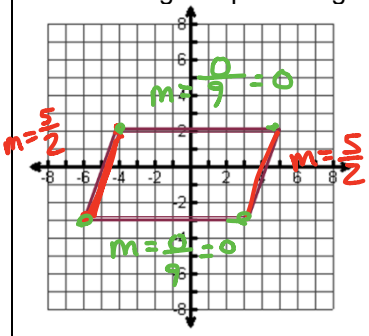
$P=23$

$A=\frac{1}{2}bh$

$=\frac{1}{2}(6)(8)$

$A=24$

7) Given that a parallelogram's **sides are parallel**, prove the following is a parallelogram.



8) Write an equation of the line that passes through (-3, 4) and is parallel to Y = -3x – 1.

$x_1\ y_1$

m

$y-y_1=m(x-x_1)$

$y-4=-3(x+3)$

$y-4=-3x-9$

$+4\quad +4$

$y=-3x-5$

9) Write an equation of the line that passes through (5, -3) and is perpendicular to y = -5/2x+1.

$x_1\ y_1$

$m=\frac{2}{5}$

$y-y_1=m(x-x_1)$

$y+3=\frac{2}{5}(x-5)$

$y+3=\frac{2}{5}x-2$

$-3\quad -3$

$y=\frac{2}{5}x-5$

10) Find a point P on the segment with endpoints **A(-1, -3)** and **B(7, 1)** that partitions it in a 3:1 ratio.

$\frac{3}{4}$

+6 (-1,-3) +3

$\frac{3}{4}(8)$ (5,0) $(4)\frac{3}{4}$

(7,1)

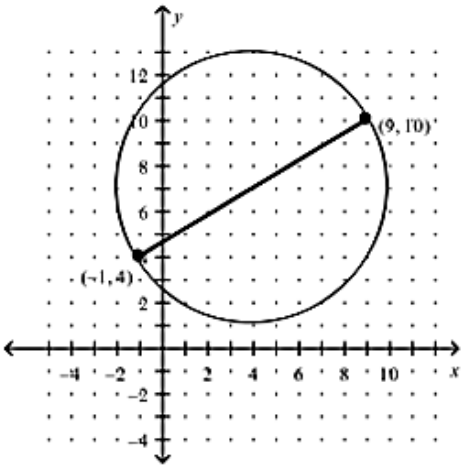
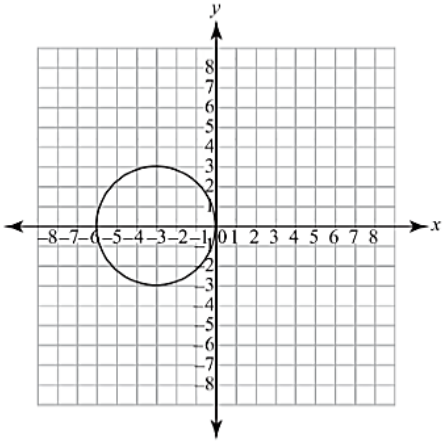
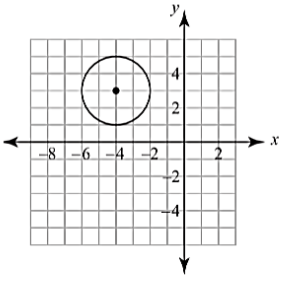
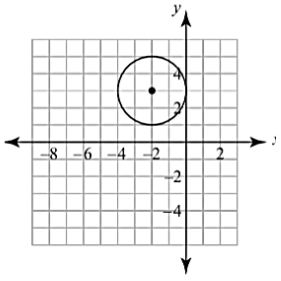
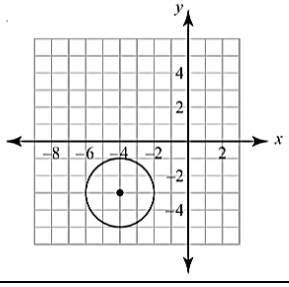
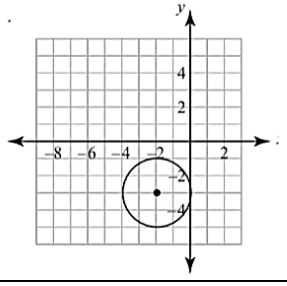
11) Find a point T on the segment with endpoints **C(-4, -6)** and **D(2, 3)** that partitions it in a 2:1 ratio.

$\frac{2}{3}$

+4 (-4,-6) +6

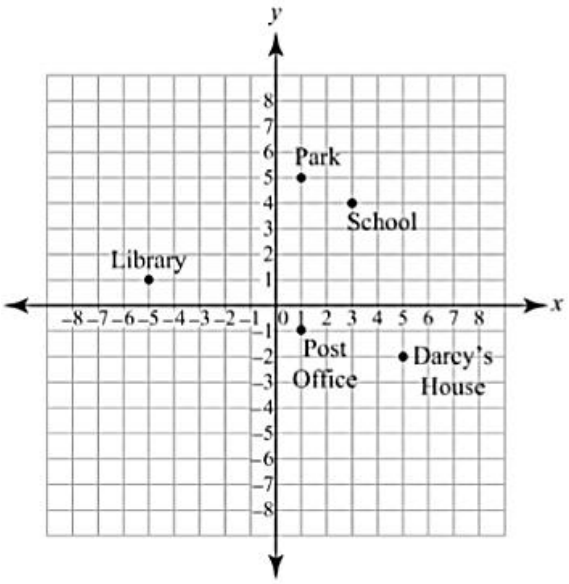
$\frac{2}{3}(6)$ (0,0) $(9)\frac{2}{3}$

(2,3)

	Answers
1) A circular sidewalk is being constructed around the perimeter of a local park. A brick pathway will be added through the diameter of the circle as shown on the coordinate plane below, and a tree will be planted in the sidewalk at the center of the circle. What are the coordinates where the tree will be planted? 	1) _____
2) Which is the equaton of the circle shown below?  A. $(x-3)^2+y^2=3$ B. $(x-3)^2+y^2=9$ C. $(x+3)^2+y^2=3$ D. $(x+3)^2+y^2=9$	2) _____
3) Given the points A(-1,2) and B(5,11), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 1:2. A. (1,5) B. (2,6.5) C. (6,9) D. (3,4.5)	3) _____
4) The equation of a circle is $(x+2)^2+(y+3)^2=4$. Which represents the equation? A.  B.  C.  D. 	4) _____

5) Darcy used a coordinate grid, shown below, to sketch the location of some important buildings in her town. Each block represents 1 square mile. If Darcy could travel in a straight line from her house to school, how many miles would she travel?

A. 5.1 miles
B. 6.3 miles
C. 8.2 miles
D. 9.1 miles



5) _____

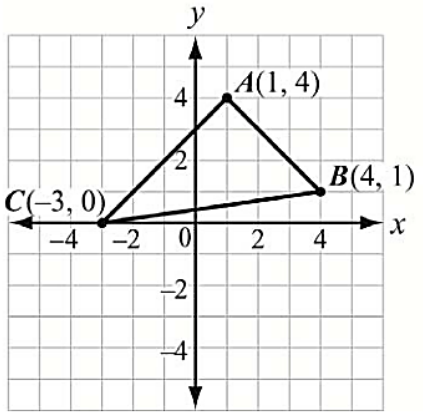
6) Which point is on a circle with a center of (3,-9) and a radius of 5?

A. (-6,5)
B. (-1,6)
C. (1,6)
D. (6,-5)

6) _____

7) Triangle ABC has vertices as shown. What is the area of the triangle?

A. $\sqrt{72}\ square\ units$
B. $12\ square\ units$
C. $\sqrt{288}\ square\ units$
D. $\sqrt{24}\ square\ units$



7) _____

8) The line p is represent by the equation $y = 4x + 1$. What is the equation of the line that is perpedcular to the line p and passes through the point (8,5)?

GSE Geometry | Unit 6 – Probability | EOC Review

Name: _____ Block: _____

Vocabulary: Independent events, dependent events, conditional probability, Addition Rule, Multiplication Rule for Independent Events, outcome, overlapping events, union, intersection

Employment Survey Results

	Age (in Years)		
Employment Status	**Less than 18**	**18 or greater**	**Total**
Has Job	20	587	607
Does Not Have Job	245	92	337
Total	265	679	944

1) Find the probability that a randomly selected person will have a job, given they are older than 18. P(job | older than 18).

$\frac{587}{679}$

2) What is the probability that person has a job?

$\frac{607}{944}$

3) Find the P(Does not have a job and is less than 18) $\frac{245}{944}$

4) What is the probability of drawing a Queen from a deck of cards and then drawing a king without replacement?

$\left(\frac{4}{52}\right)\left(\frac{4}{51}\right) = \frac{16}{2652}$

Independent or dependent

5) Drawing one card from a standard deck of cards, what is

P(drawing a 6 card or drawing a Jack)

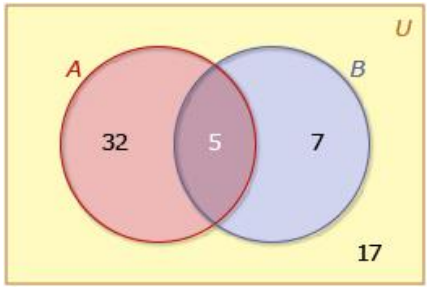
$\frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$

Mutually exclusive or overlapping

6) For a standard deck of cards, what is the probability of drawing a diamond, replacing it and then drawing a 2?

$\left(\frac{13}{52}\right)\left(\frac{4}{52}\right) = \frac{52}{2704}$

Independent or dependent



7) Find P(A)= $\frac{37}{61}$

8) Find P(B)= $\frac{12}{61}$

9) Find P(B)'= $\frac{49}{61}$

10) Find P(A ∪ B)= $\frac{44}{61}$

11) Find P(A ∩ B)= $\frac{5}{61}$

12) Find $P(\overline{A \cap B})$= $\frac{56}{61}$

13) If you draw one card from a standard deck of cards what is

P(jack card or heart)

$\frac{4}{52} + \frac{13}{52} - \frac{1}{52} = \frac{16}{52}$

Mutually exclusive or overlapping

14) Are the events independent?

P(A) = 0.08; P(B) = 0.4;

P(A ∩ B) = 0.12

$P(A \cap B) = P(A) \cdot P(B)$

$.12 = (.08)(.4)$

$.12 \neq .032$

dependent

15) Are the events independent?

P(A) = 0.30; P(B) = 0.15;

P(A ∩ B) = 0.045

$P(A \cap B) = P(A) \cdot P(B)$

$.045 = (.3)(.15)$

$.045 = .045$

independent

	Answers
1) For which set of proabilities would event A and B be independent? A. $P(A)\ 0.25, P(B) = 0.25;\ P(A\ and\ B) = 0.50$ B. $P(A) 0.08, P(B) = 0.40;\ P(A\ and\ B) = 0.12$ C. $P(A) 0.16, P(B) = 0.24;\ P(A\ and\ B) = 0.32$ D. $P(A)\ 0.10, P(B) = 0.30;\ P(A\ and\ B) = 0.03$	1) _____
2) What is the probability that a radonmly chosen person has blonde hair, given that the person selected is male? **Hair Color** A. 0.51 B. 0.55 C. 0.58 D. 0.63	2) _____
3) When rolling a fair, six-sided number cube, what is the probability of rolling an even number or a number less than 3? A. $\frac{5}{6}$ B. $\frac{2}{3}$ C. $\frac{1}{2}$ D. $\frac{1}{3}$	3) _____
4) Each letter of the alphabet is written on separate cards in red ink. The cards are placed in a container. Each letter of the alphbet is also written on separate cards in black ink. The cards are placed in the same container. What is the probability that a card radomly selected from the container has a letter written in black ink or the letter is A or Z? A. $\frac{1}{2}$ B. $\frac{7}{13}$ C. $\frac{15}{26}$ D. $\frac{8}{13}$	4) _____

	Brown	Blonde	Red	Total
Male	548	876	82	1,506
Female	612	716	66	1,394
Total	1,160	1,592	148	2,900

5) Ms. Klein surveyed 240 men and 285 women about their vehicles. Of those surveyed, 155 men and 70 women said they own a red vehicle. If a person is chosen at random from those surveyed, what is the probability of choosing a woman or a person who does NOT own a red vehicle?

5) _____

A. $\frac{14}{57}$
B. $\frac{71}{105}$
C. $\frac{74}{105}$
D. $\frac{88}{105}$

6) Bianca spins two spinners that have four equal sections numbered 1 through 4. If she spins a 4 on at least one spin, what is the probability that the sum of her two spins is an odd number?

6) _____

A. $\frac{1}{4}$
B. $\frac{7}{16}$
C. $\frac{4}{7}$
D. $\frac{11}{16}$

7) Assume that the following events are independent:

- The probability that a high school senior will go to college is 0.72.
- The probability that a high school senior will go to college and live on campus is 0.46

What is the probability that a high school senior will live on campus, given that the person will go to college?

7) _____

A. 0.26
B. 0.33
C. 0.57
D. 0.64

8) A student draws a card from a standard deck and then draws another card without replacing the first card. Explain why the probability of picking an ace on the frist draw and the probability of picking a 7 on the second draw are NOT independent events.