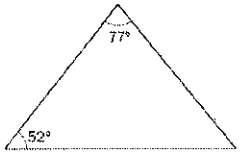
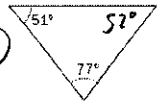
GSE Geometry | EOC REVIEW | Released Test Questions

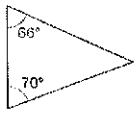
Name: Key Date: _____

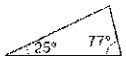
1.



Which triangle is similar to the given triangle?

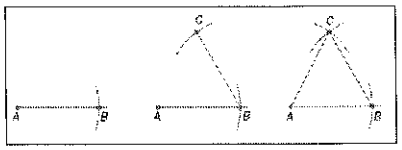
A. 

B. 

C. 

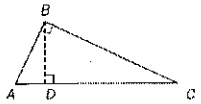
D. 

2. The following are the steps to construct an equilateral triangle. Determine the error in the steps. Write your answer on the lines provided.



In step 2, line segment BC is drawn before the necessary arcs are drawn. Point C should be made by the intersection of 2 arcs from A and B.

3. Right $\triangle ABC$ with altitude BD.



Prove $\triangle ABC$ is similar to $\triangle BDC$.

Statement	Reason
$\triangle ABC$ is rt $\triangle$	Given
Altitude BD	Given
$\angle BDC$ is rt $\angle$	Defn of altitude
$\angle ABC \cong \angle BDC$	All right $\angle$s $\cong$
$\angle BCD \cong \angle BCD$	Reflexive Prop.
$\triangle ABC \sim \triangle BDC$	AA Similarity

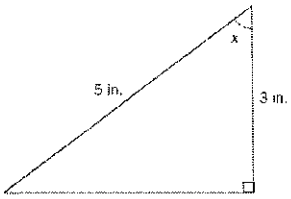
4. Which equation is true?

A. $\sin 40° = \tan 50°$
B. $\cos 40° = \cos 50°$
C. $\sin 40° = \sin 50°$
D. $\cos 40° = \sin 50°$

5. Which point is Not on a circle with a center of (0, 0) and a radius of 10?

A. (0, 5)
B. (10, 0)
C. (0, −10)
D. (−8, 6)

6. Study the triangle.



Explain how you can determine the value of sin x. Use the word theta in your explanation instead of the symbol. Write your answer on the lines provided.

$x^2 + 3^2 = 5^2 \Rightarrow x = 4$

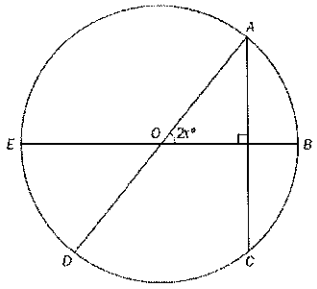
$\sin\theta = 4/5 \Rightarrow \theta = 55.13°$

7. Explain why the formula for the area of a sector is $A = \frac{\pi r^2 \theta}{360}$, where r is the radius of the circle and θ is the measure in degrees of the central angle of the sector. Use the word pi in your explanation instead of the symbol π. Write your answer on the lines provided.

πr^2: Area of the whole circle

$\theta/360$: Gives the fraction of the whole circle that you are finding.

8. Points A, B, C, D, and E are located on the circle O, as shown in this figure.



The measure of $\overset{\frown}{CD}$ is 80°. What is the value of x?

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

9. A pyramid and a rectangular prism have congruent bases and equal heights. Write a statement comparing the volume of the figures, and explain your reasoning. Write your answer on the lines provided.

Pyramid = $\frac{1}{3}Bh$

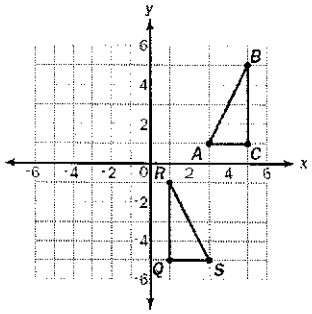
Prism = Bh

So, Pyramid is $\frac{1}{3}$ of the Prism

11. Which transformation on quadrilateral $ABCD$ produces an image that does not preserve distance between points in quadrilateral $ABCD$?

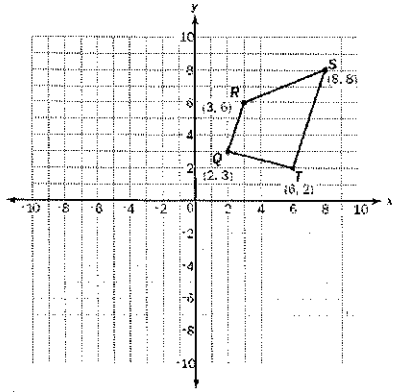
A. reflection across $y = x$
B. translation 3 units down and 4 units to the right
C. dilation by a scale factor of 2
D. rotation of 270 degrees

10. What is the sequence of transformations that carry triangle *ABC* to triangle *QRS*?



A. Triangle *ABC* is reflected across the line $x = 3$. Then it is translated 2 units down.
B. Triangle *ABC* is reflected across the line $x = 3$. Then it is translated 6 units down.
C. Triangle *ABC* is translated 2 units to the left. Then it is rotated 90 degrees counterclockwise about the point (1, 1).
D. Triangle *ABC* is translated 2 units to the right. Then it is rotated 90 degrees counterclockwise about the point (1, 1).

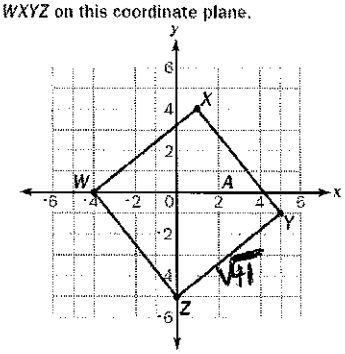
12. Look at quadrilateral *QRST*.



What is the image of point *R* after a counterclockwise rotation of 270 degrees about the origin?

A. (6, −3)
B. (−3, 6)
C. (−6, 3)
D. (3, −6)

13. Look at the square *WXYZ* on this coordinate plane.



What is the perimeter of the square *WXYZ*?

A. 20 units
B. 25.6 units
C. 32 units
D. 40.9 units

14. What is the coordinate of point *P* that lies along the directed line segment from *Q*(2, 5) to *R*(7, 12) and partitions the segment in the ratio of 3 to 5?

A. (3, 4.2)
B. (4.5, 8.5)
C. (5, 9.2)
D. (5, 7)

15. What is the equation of a line that is perpendicular to $y = \frac{1}{2}x - 6$ and passes through the point (6, 4)?

A. $y = -\frac{1}{2}x + 1$
B. $y = -\frac{1}{2}x + 7$
C. $y = -2x - 8$
D. $y = -2x + 16$

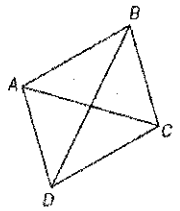
16. Study this equation of a circle.

$$x^2 - 6x + y^2 + 2y + 6 = 0$$

Which of these represents the center and radius of the circle?

A. center: (3, −1), radius: 4
B. center: (−3, 1), radius: 4
C. center: (3, −1), radius: 2
D. center: (−3, 1), radius: 2

17. What proves that figure *ABCD* is a parallelogram?



A. Diagonal *BD* bisects angle *ABC*.
B. Side *AB* is equal to diagonal *AC*.
C. Diagonal *BD* bisects diagonal *AC*.
D. Diagonal *BD* is greater than diagonal *AC*.

18. One bag of lawn fertilizer can cover approximately 5,000 square feet. Mike's lawn is about 500 square feet. When Mike applies fertilizer to his lawn, he applies it to $\frac{3}{4}$ of his lawn only.

Part A: About how many complete times can Mike fertilize his lawn with one bag of fertilizer?

13

Part B: Mike fertilizes his lawn an average of 4 times per year. About how many full years will he be able to fertilize his lawn with one bag of fertilizer?

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19. 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 first draw and the probability of picking a 7 on the second draw are NOT independent events. Write your answer on the lines provided.

Because the first card is not replaced, the probability of picking the 7 is affected by first picking the ace.