2025-26

EOC Test Items Review

Name_____

B.E.S.T Instructional ITEMS 2024-25

1. *Instructional Item 1*

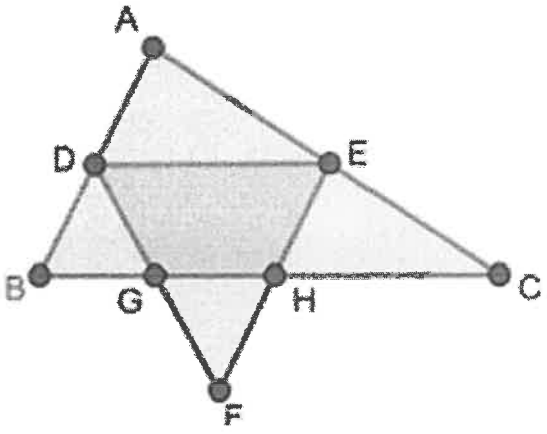
What value of x will make M the midpoint of $\overline{PQ}$ if $PM = 3x - 1$ and $PQ = 5x + 3$?

2. *Instructional Item 2*

Two lines intersect at point P. If the measures of a pair of vertical angles are $(2x - 7)^\circ$ and $(x + 13)^\circ$, determine x and the measures of the other two angles?

3. *Instructional Item 1*

$\overline{GH}$ is a midsegment of triangle DEF and $\overline{DE}$ is a midsegment of triangle ABC. If $GH = 1.5$ cm, what is the length of segment BC?

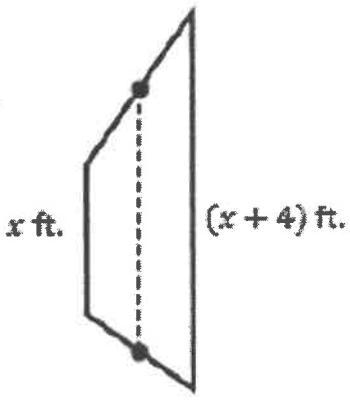


4. *Instructional Item 1*

Given parallelogram $WXYZ$, where $WX = 2x + 15$, $XY = x + 27$ and $YZ = 4x - 21$, determine the length of ZW, in inches.

5. *Instructional Item 1*

Tulips should be planted three inches apart to give a full look. The Starlings have a trapezoidal plot for a flower garden, as shown in the figure. They are going to put tulips along the parallel sides of the garden. The midsegment to the garden is 10 feet long. Tulips are sold in bags of 25 bulbs.



Part A. What are the lengths of the parallel sides of the garden?

(6) *Instructional Item 1*

Triangles ABC and DEF are congruent. Draw and label them with the following information:

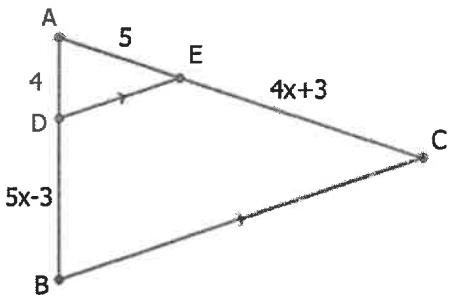
$\angle A \cong \angle D$, $\angle C \cong \angle F$ and $\overline{AC} \cong \overline{DF}$, AB=2x+7 EF=4x+5 DE= 5x-2

Part a. Which triangle congruence theorem proves they are congruent.

Part b. Determine the length segment EF.

(7) *Instructional Item 2*

If ΔADE and ΔABC are similar, what is the length of $\overline{AC}$, in units?



(8) *Instructional Item 1*

A triangle whose vertices are located at $\left(\frac{2}{7}, -1\right)$, $\left(-4, -\frac{14}{5}\right)$ and (3,1) is shifted to the right 2 units.

Part A. What are the coordinates of the triangle after the translation?

Part B. Describe the transformation that would map the preimage to the image algebraically.

(9) *Instructional Item 1*

Circle the transformations that can be used when it is important to preserve angle measure.

Horizontal Translations	Reflections	Clockwise Rotations
Dilations	Vertical Translations	Counterclockwise Rotations

(10) *Instructional Item 2*

Circle the transformations that can be used when it is important to preserve distance.

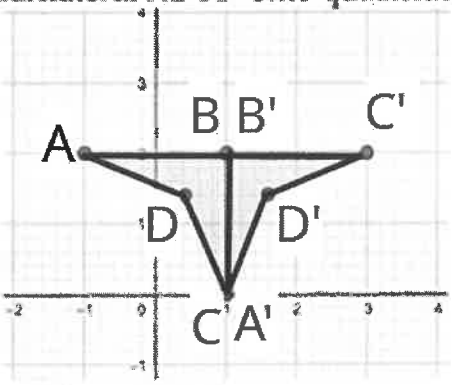
Horizontal Translations	Reflections	Clockwise Rotations
Dilations	Vertical Translations	Counterclockwise Rotations

(11) *Instructional Item 3*

Write a transformation, or sequence of transformations, that preserves angle measure but does not preserve distance.

(12) ***Instructional Item 1***

A single rotation mapped quadrilateral *ABCD* onto quadrilateral *A'B'C'D'*.



Part A. What is the center of the rotation?

Part B. If the rotation is counterclockwise, how many degrees is the rotation?

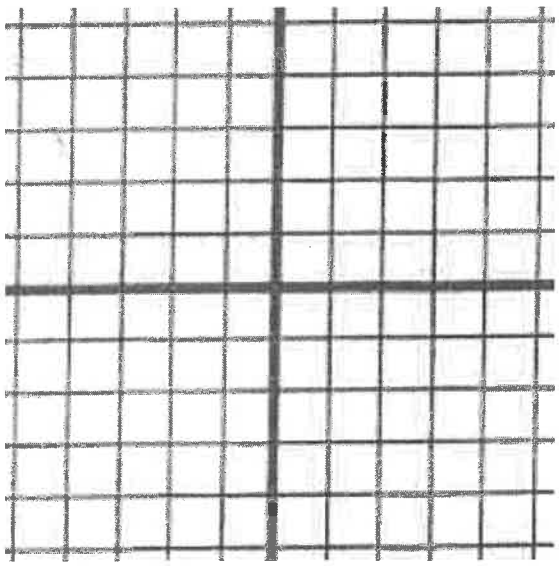
Part C. Describe another transformation that maps quadrilateral *ABCD* onto quadrilateral *A'B'C'D'*.

(13) Instructional Item 1

Graph quadrilateral ABCD. A(-5,-1), B(-3,-1), C(-2,-2), D(-4,-2)

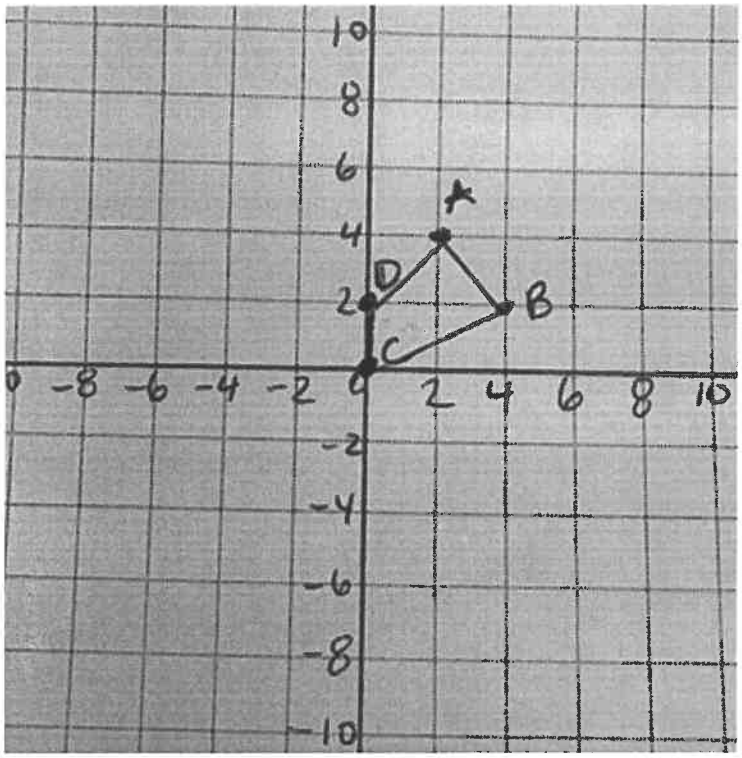
Perform the following sequence of transformations on quadrilateral ABCD on the coordinate plane provided.

- Rotate 180° counterclockwise about the origin.
- Then, (x,y) → (x - 2, y - 3)



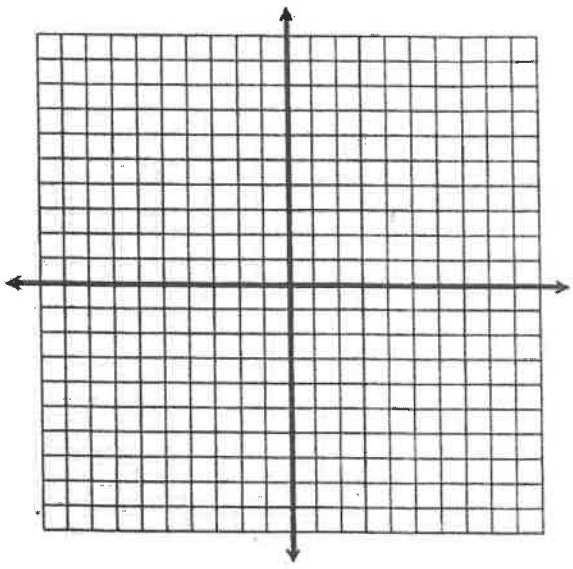
(14) Instructional Item 2

Draw the resulting figure after quadrilateral ABSD is transformed using (x,y) ⟶ (-x, y - 3)



(15) *Instructional Item 2*

Given quadrilateral $ABCD$ with vertices $(-3,-4)$, $(1,5)$, $(5,3)$, and $(5,-8)$, respectively, classify the type of quadrilateral.



(16) *Instructional Item 1*

Given $J(-4,2)$ and $K(2,1)$, find the coordinates of point M on $\overline{JK}$ that partitions the segment into the ratio 1: 2.

17 *Instructional Item 1*

Which of the following polygons are cross-sections that are parallel or perpendicular to the base of a regular pentagonal pyramid? Select all that apply.

a. Triangle
b. Parallelogram
c. Trapezoid
d. Pentagon
e. Hexagon
f. Octagon

18 *Instructional Item 1*

Which real-world object could be used describe the figure generated by rotating a rectangle about a line that is parallel to a side but not touching the rectangle?

a. A doughnut
b. A piece of plastic tubing
c. An ice cream cone
d. A shoebox
e. An egg

19 *Instructional Item 1*

The perfume Eau de Matimatica is packaged in a triangular prism bottle. The dimensions of the travel size are $\frac{1}{3}$ the dimensions of the standard bottle. How does the volume of the standard bottle compare to the travel size?

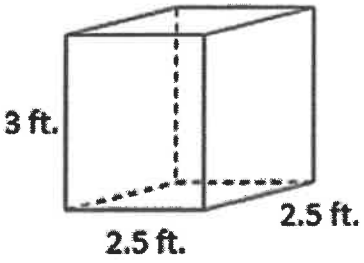
20 *Instructional Item 1*

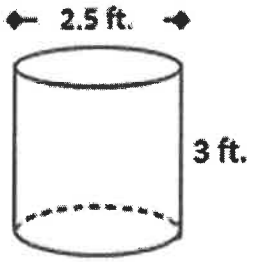
In 2019 the population for Siesta Key, FL, was 5,573 while Destin, FL, had a population of 13,702. Siesta Key is 3.475 square miles and Destin is 8.46 square miles. Which location has a smaller population density?

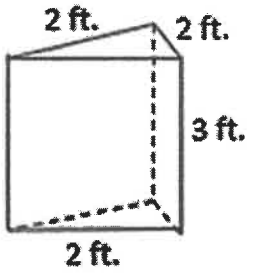
(21) *Instructional Item 1*

Kristin and Rachel are hosting an art show where they will showcase local artists' sculptures. They are painting pedestals upon which the sculptures will be placed. Pictures of the pedestals they will be using are below. One gallon of paint can cover 400 square feet.

How many gallons of paint will they need to purchase to cover at least 4 of each type of pedestal? Assume that the base of each will not be painted.

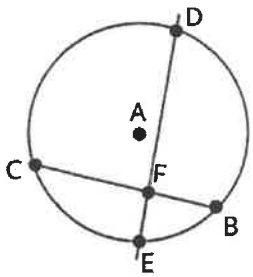






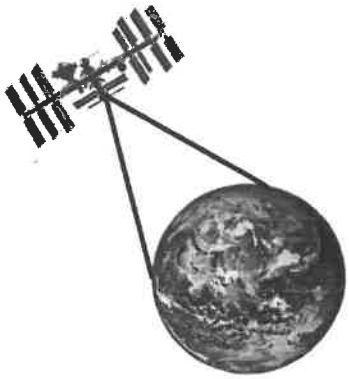
(22) *Instructional Item 1*

In Circle A, $\overline{DE}$ and $\overline{BC}$ intersect at point F. $FE = 1.3$ units, $BF = 1.9$ units, $FD = x + 1.3$ units and $CF = x$ units. Find the value of x.



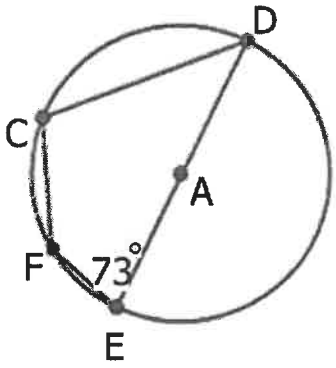
23 *Instructional Item 1*

The International Space Station (ISS) passes over the earth 248 miles above the earth's surface. The angle formed between the two tangents formed from the ISS and the earth measures 140.4°. What is the measure of the arc of the earth that could have a view of the ISS passing overhead?



24 *Instructional Item 1*

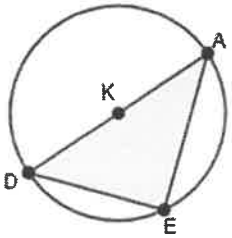
In circle A, segment DE is a diameter.



Part A. Determine the measure of angle C.
Part B. If the measure of arc CF is 50°, determine the measures of angle D and angle F.

25 *Instructional Item 2*

Triangle DAE is inscribed in Circle K.



Part A. Determine the value of x if the measure of angle E is $(2x + 30)°$.
Part B. Determine the measure of angle D if the measure of angle A is $(2x - 20)°$.

(26) *Instructional Item 2*

What is the equation of a circle centered at $(-1, 2)$, with a diameter of 2 units?

(27) *Instructional Item 3*

What is the equation of the circle centered at $(-2, -5)$ and passing through $(5, 0)$?

(28) *Instructional Item 2*

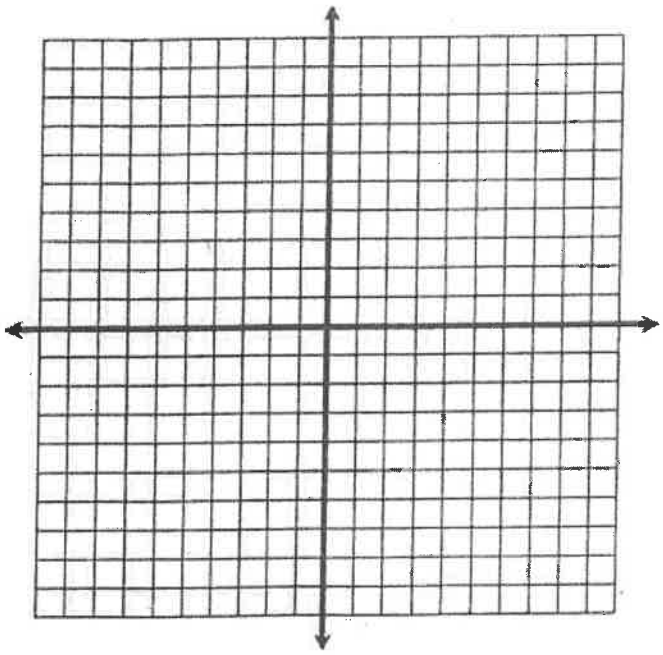
The equation of a circle is given.

$$x^2 + y^2 - 6x + 8y + 5 = 0$$

Part A. Determine the center and the radius of the circle.

Part B. What is the ordered pair that contains the maximum y-value of the circle?

Part C. Sketch the graph of the circle on the coordinate plane.

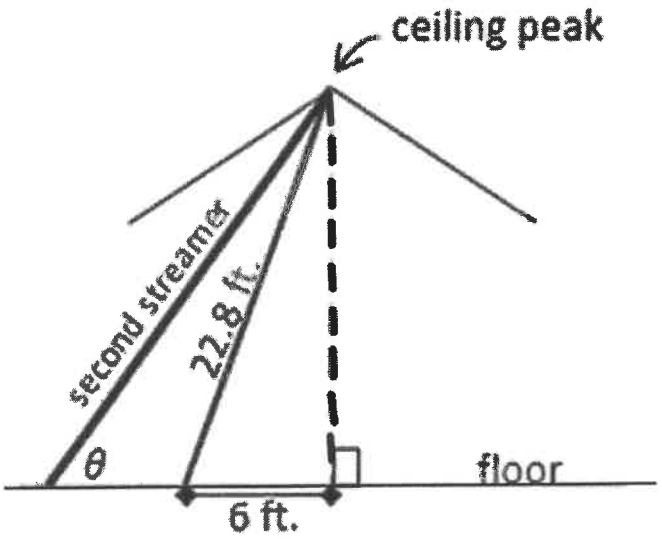


(29) *Instructional Item 1*

Belle is hanging streamers for her brother's surprise birthday party. She secures two streamers of different lengths at the peak of the ceiling. The center of the floor is directly underneath the ceiling peak. The distance along the floor from the center of the room to where the first streamer is attached is 6 feet. The second streamer is attached to the floor further from the center of the floor than the first streamer.

The distance between the streamers is x feet and the length of the second streamer is y feet. The angle formed between the second streamer and the floor is θ. Select all of the equations that are true to the nearest tenth based on the diagram.

a. $\sin\theta = \frac{22.0}{y}$
b. $\sin\theta = \frac{22.8}{y}$
c. $\tan\theta = \frac{22.0}{6}$
d. $\cos\theta = \frac{x}{y}$
e. $\cos\theta = \frac{x+6}{22.8}$
f. $\tan\theta = \frac{22.0}{x+6}$
g. $\sin\theta = \frac{22.0}{22.8}$
h. $\tan\theta = \frac{22.8}{x}$



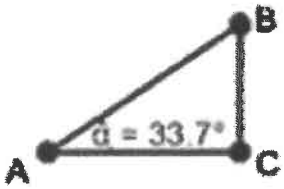
(30) *Instructional Item 2*

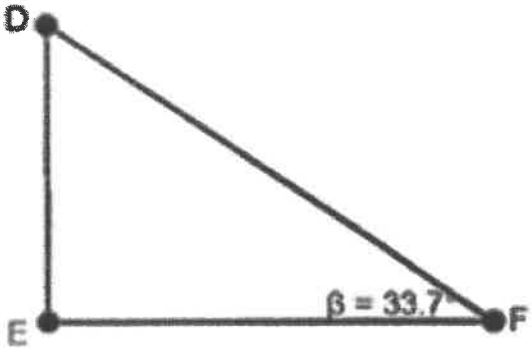
Given the diagram below showing two right triangles, complete the following statements.

$$\sin 33.7° = \frac{\square}{DF}$$

$$\sin 33.7° = \frac{BC}{\square}$$

$$\frac{BC}{AC} = \frac{\square}{\square}$$



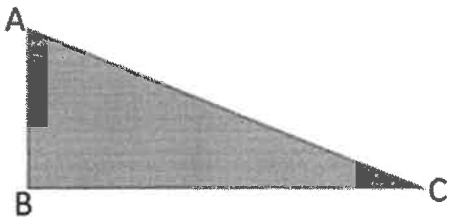


(31) *Instructional Item 1*

The logo of a local construction company contains an equilateral triangle. The height of the triangle is 10 units. What is the length of the measure of each side of the triangle?

(32) *Instructional Item 2*

The right triangle ABC is shown. Angle B is the right angle and the length of AB is 1.5 centimeters and the length of BC is 3.1 centimeters.



Part A. Determine the measure of angles A and C.

Part B. Determine the length of AC.

33 *Instructional Item 1*

Use the following statement to answer the questions.

A triangle is an equilateral triangle if and only if the triangle has three congruent sides.

Write the following:

a. Conditional statement

b. Converse

c. Inverse

d. Contrapositive

e. Hypothesis

f. Conclusion

g. List the logically equivalent statements

34 *Instructional Item 1*

Puaglo said the following statements are true. Select all the statements that are false.

a. All quadrilaterals have four right angles.
b. A triangle is a polygon with three sides.
c. All circles are similar.
d. All equiangular quadrilaterals are congruent.
e. A trapezoid must have at least one obtuse angle.