

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**EOCT Practice Problems**

1) This table shows the average low temperature, in °F, recorded in Macon, GA, and Charlotte, NC, over a six-day period.

Day	1	2	3	4	5	6
Temperature, in °F, in Macon, GA	71	72	66	69	71	73
Temperature, in °F, in Charlotte, NC	69	64	68	74	71	75

Which conclusion can be drawn from the data?

- A. The interquartile range of the temperatures is the same for both cities.
- B. The lower quartile for the temperatures in Macon is lower than the lower quartile for the temperatures in Charlotte.
- C. The mean and median temperatures of Macon were higher than the mean and median temperatures of Charlotte.
- D. The upper quartile for the temperatures in Charlotte was lower than the upper quartile for the temperatures in Macon.

2) A school was having a coat drive for a local shelter. A teacher determined the median number of coats collected per class and the interquartile ranges of the number of coats collected per class for the freshman and for the sophomores.

- The freshman collected a median number of coats per class of 10, and the interquartile range was 6.
- The sophomores collected a median number of coats per class of 10, and the interquartile range was 4.

Which range of numbers includes the third quartile of coats collected for both classes?

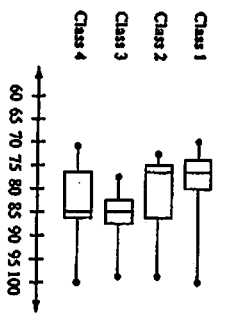
- A. 4 to 14
- B. 6 to 14
- C. 8 to 15
- D. 12 to 15

3) A reading teacher recorded the number of pages read in an hour by each of her students. The numbers are shown below.  
44, 49, 39, 43, 50, 44, 45, 49, 51

For this data, which summary statistic is NOT correct?

- A. The minimum is 39.
- B. The lower quartile is 44.
- C. The median is 45.
- D. The maximum is 51.

4) A science teacher recorded the pulse rates for each of the students in her classes after the students had climbed a set of stairs. She displayed the results, by class, using the box plots shown.



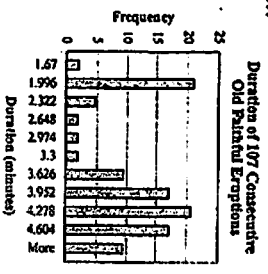
- Which class had the highest pulse rates after climbing the stairs?
- A. Class 1      B. Class 2      **C. Class 3**      D. Class 4

5) Peter went bowling, Monday to Friday, two weeks in a row. He only bowled one game each time he went. He kept track of his scores below.

Week 1: 70, 70, 70, 73, 75  
Week 2: 72, 64, 73, 73, 75

- What is the best explanation of why Peter's Week 2 mean score was lower than his Week 1 mean score?
- A. Peter received the same score three times in Week 1.  
**B. Peter had one very bad score in Week 2.**  
C. Peter did not improve as he did the first week.  
D. Peter had one very good score in Week 1.

6) This histogram shows the frequency distribution of duration times for 107 consecutive eruptions of the Old Faithful geyser. The duration of an eruption is the length of time, in minutes, from the beginning of the spewing of water until it stops. What is the BEST description for the distribution?



- A. bimodal  
B. uniform  
C. multi-outliers  
D. skewed to the right

7) A teacher determined the median scores and interquartile ranges of scores for a test she gave to two classes.

- In Class 1, the median score was 70 points, and the interquartile range was 15 points.
- In Class 2, the median score was 75 points, and the interquartile range was 12 points.

Which range of numbers includes only third quartile of scores for both classes?

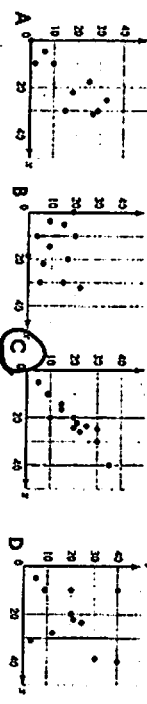
A. 70 to 87 points  
B. 70 to 85 points  
C. 75 to 87 points  
**D. 75 to 85 points**

8) This table shows admission price for various museums in the same city.

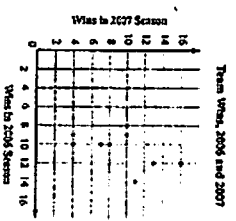
Museum	Price
Museum A	\$9.00
Museum B	\$12.00
Museum C	\$9.75
Museum D	\$8.25
Museum E	\$11.25

- Which is the mean absolute deviation for this set of data?
- A. \$1.26**  
B. \$6.30  
C. \$10.05  
D. \$10.13

9) Which graph displays a set of data for which a linear function is the model of best fit?

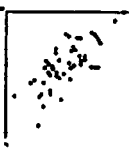


10) This graph plots the number of wins in the 2006 and 2007 seasons for a sample of professional football teams.



- Based on the regression model, what is the predicted number of 2007 wins for a team that won 5 games in 2006?
- A. 3**      B. 4      C. 5      D. 6

11) How would you describe the correlation of the two variables based on the scatter plot?



- positive, strong linear
- negative, weak linear
- negative, fairly strong linear
- little or no correlation

12) Find the mean for the data below, which shows the number of cars owned by families in a neighborhood.

CARS	FREQUENCY
1	3
2	15
3	5
4	2

- A. 6.25
- B. 4.75
- C. 3.16
- D. 2.24

13) Which of the following sets has the largest interquartile range?

	SET 1	SET 2	SET 3	SET 4
MEAN	45	50	50	60
Q1	30	20	30	50
MEDIAN	45	40	45	65
Q3	60	60	65	95

- A. Set 1
- B. Set 2
- C. Set 3
- D. Set 4

14) For the data given, find the equation of the line of best fit:  
 (3,5), (4,5), (6,7), (8,5), (10,9)

- A.  $y = 0.478x + 5.67$
- B.  $y = 0.478x + 3.40$
- C.  $y = 0.45x + 5.67$
- D.  $y = 0.45x + 3.40$

6) Two angles of a triangle measure  $20^\circ$  and  $50^\circ$ . What is the measure of the third angle?

- A.  $30^\circ$
- B.  $70^\circ$
- C.  $110^\circ$
- D.  $160^\circ$

7) What is the solution to the equation  $P = 2t + 2w$  when solved for  $w$ ?

- A.  $w = \frac{P}{2}$
- B.  $w = \frac{P-2t}{2}$
- C.  $w = \frac{P-t}{2}$
- D.  $w = \frac{P-2t}{2}$

8) Bruce owns a business that produces widgets. He must pay for more in revenue than he pays out in costs in order to turn a profit.

- It costs \$10 in labor and materials to produce each of his widgets.
- His rent each month for his factory is \$4000.
- He sells each widget for \$25.

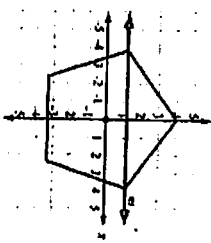
How many widgets does Bruce need to sell each month to make the maximum profit?

- A. 160
- B. 260
- C. 287
- D. 400

Unit 5: Transformations in the Coordinate Plane

EOCT Practice Items

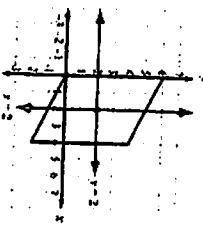
1) A regular pentagon is centered about the origin and has a vertex at (0, 4).



Which transformation maps the pentagon to itself?

- A. a reflection across line  $m$
- B. a reflection across the  $x$ -axis
- C. a clockwise rotation of  $100^\circ$  about the origin
- D. a clockwise rotation of  $144^\circ$  about the origin

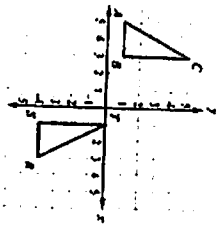
2) A parallelogram has vertices at  $(0, 0)$ ,  $(0, 6)$ ,  $(4, 4)$ , and  $(4, -2)$ .



Which transformation maps the parallelogram to itself?

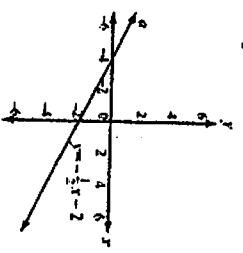
- A. a reflection across the line  $x = 2$
- B. a reflection across the line  $y = 2$
- C. a rotation of  $180^\circ$  about the point  $(2, 2)$
- D. a rotation of  $180^\circ$  about the point  $(0, 0)$

3) Which sequence of transformations maps  $\triangle ABC$  to  $\triangle RST$ ?



- A. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 1 unit down.
- B. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 5 units down.
- C. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  clockwise about the point  $(1, 1)$ .
- D. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  counterclockwise about the point  $(1, 1)$ .

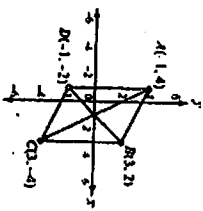
Unit 6: Connecting Algebra and Geometry Through Coordinates  
1) An equation of line  $a$  is  $y = \frac{1}{2}x - 2$ .



Which is an equation of the line that is perpendicular to line  $a$  and passes through the point  $(-4, 0)$ ?

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

2) Parallelogram  $ABCD$  has vertices as shown.



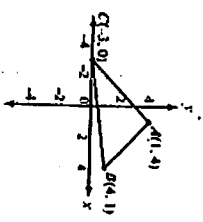
Which equation would be used in proving that the diagonals of parallelogram  $ABCD$  bisect each other?

- A.  $\sqrt{(1-1)^2 + (2-0)^2} = \sqrt{(1-3)^2 + (0-4)^2}$
- B.  $\sqrt{(3+1)^2 - (2+0)^2} = \sqrt{(1+3)^2 + (0-4)^2}$
- C.  $\sqrt{(-1-1)^2 - (4-0)^2} = \sqrt{(1-3)^2 + (0-4)^2}$
- D.  $\sqrt{(-1-1)^2 - (4+0)^2} = \sqrt{(1+3)^2 - (0-4)^2}$

3) Given the points  $P(2, -1)$  and  $Q(-2, -9)$ , what are the coordinates of the point on directed line segment  $PQ$  that partitions  $PQ$  in the ratio  $\frac{2}{3}$ ?

- A.  $(-\frac{22}{5}, -4)$
- B.  $(\frac{12}{5}, -3)$
- C.  $(\frac{2}{5}, -\frac{8}{5})$
- D.  $(\frac{2}{3}, -\frac{8}{3})$

4) Triangle  $ABC$  has vertices as shown.



What is the area of the triangle?

- A.  $\sqrt{5}$  square units
- B.  $\frac{1}{2}\sqrt{5}$  square units
- C.  $\sqrt{25}$  square units
- D.  $\frac{1}{2}\sqrt{25}$  square units