**Name:** _____ **Block:** _____ **Seat:** _____ **ID: A**

## Qtr 3 Practice

**Multiple Choice**
*Identify the choice that best completes the statement or answers the question.*

____ 1. What is the image of $P(11,-4)$ using the translation $(x, y) \rightarrow (x-17, y+2)$?

a. $P'(-6,-2)$
c. $P'(-11, 4)$
b. $P'(6, 2)$
d. $P'(-4, 11)$

____ 2. Points $F(2, 5)$, $G(4, 4)$, and $H(-1,-2)$ are the vertices of $\Delta FGH$. Find the vertices of $\Delta F'G'H'$ by using the vector $\langle -3,-2 \rangle$.

a. $F'(-6,-10)$, $G'(-12,-8)$, $H'(3, 4)$
c. $F'(-1, 3)$, $G'(1, 2)$, $H'(-4,-4)$
b. $F'(5, 7)$, $G'(7, 6)$, $H'(2, 0)$
d. $F'(0, 2)$, $G'(2, 1)$, $H'(-3,-5)$

____ 3. Add $\begin{bmatrix} 4 & -2 & 9 \\ -3 & 7 & 0 \\ 1 & 4 & 5 \end{bmatrix} + \begin{bmatrix} 0 & 3 & -4 \\ 6 & 1 & 8 \\ -2 & 1 & 5 \end{bmatrix}$

a. $\begin{bmatrix} 4 & 1 & 5 \\ 3 & 8 & 8 \\ -1 & 5 & 10 \end{bmatrix}$
c. $\begin{bmatrix} 4 & -5 & 13 \\ -9 & 6 & -8 \\ 3 & 3 & 10 \end{bmatrix}$
b. $\begin{bmatrix} 4 & 0 & -3 \\ 0 & 8 & 1 \\ -7 & 5 & 6 \end{bmatrix}$
d. $\begin{bmatrix} 4 & 5 & 13 \\ 9 & 8 & 8 \\ 3 & 5 & 10 \end{bmatrix}$

____ 4. Multiply $\begin{bmatrix} 6 \\ -1 \end{bmatrix} \begin{bmatrix} -3 & 2 \end{bmatrix}$.

a. $\begin{bmatrix} -18 & 12 \\ 3 & -2 \end{bmatrix}$
c. $\begin{bmatrix} -6 \\ 1 \end{bmatrix}$
b. $\begin{bmatrix} 3 & 8 \\ -4 & 1 \end{bmatrix}$
d. $[-20]$

____ 5. Which statement is false?

a. If $(a, b)$ is reflected in the $x$-axis, its image is the point $(a,-b)$.

b. If $(a, b)$ is reflected in the $y$-axis, its image is the point $(-a, b)$.

c. If $(a, b)$ is reflected in the $y = x$, its image is the point $(b, a)$.

d. If $(a, b)$ is reflected in the $y = -x$, its image is the point $(-a,-b)$.

____ 6. The vertices of $\Delta PQR$ are $P(3,-1)$, $Q(-2, 7)$, and $R(6, 5)$. Find the reflection matrix of $\Delta P'Q'R'$ in the line $y = x$.

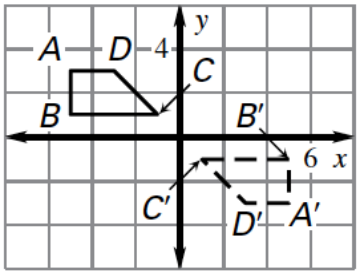
a. $\begin{bmatrix} 1 & -7 & -5 \\ -3 & 2 & -6 \end{bmatrix}$

b. $\begin{bmatrix} -1 & 7 & 5 \\ 3 & -2 & 6 \end{bmatrix}$

c. $\begin{bmatrix} -3 & 2 & -6 \\ -1 & 7 & 5 \end{bmatrix}$

d. $\begin{bmatrix} 3 & -2 & 6 \\ 1 & -7 & -5 \end{bmatrix}$

____ 7. Which statement describes the image?



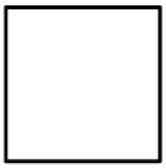

a. Reflection in the line $y = x$

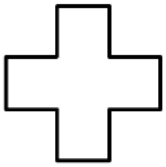
b. Rotation of 180° about point $(-1, 1)$

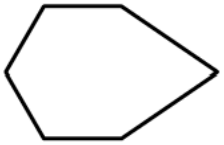
c. Rotation of 180° about the origin

d. Translation right two units, down 2 units

____ 8. Which of the following could make a regular tessellation?

a. 

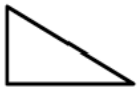
b. 

c. 

d. 

____ 9. Which figure has rotational symmetry?

a. 

c. 

b. 

d. 

____ 10. The vertices of quadrilateral $EFGH$ are $E(-2,-1)$, $F(1, 2)$, $G(6, 0)$, and $H(2,-2)$. Find the scale factor if an image of $EFGH$ has vertices $E'\left(-3, -\frac{3}{2}\right)$, $F'\left(\frac{3}{2}, 3\right)$, $G'(9, 0)$, and $H'(3,-3)$.

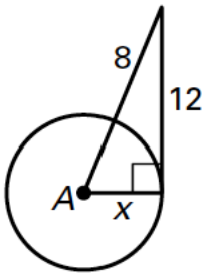
a. $\frac{2}{3}$

c. $-\frac{2}{3}$

b. $-\frac{3}{2}$

d. $\frac{3}{2}$

____ 11. Find radius $x$ of $\odot A$.



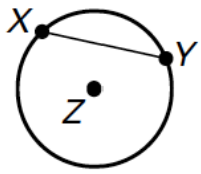

a. 5

c. 4

b. 3

d. 6

____ 12. Which term best describes $\overline{XY}$?



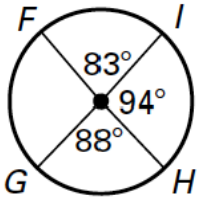

a. tangent

c. chord

b. secant

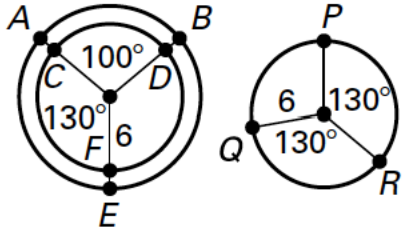
d. diameter

____ 13. Find $m\overset{\frown}{FGH}$.



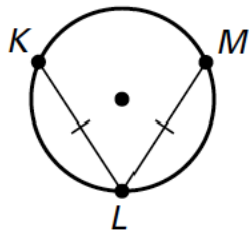

a. 183°
b. 95°
c. 182°
d. 92°

____ 14. Which pair of arcs is congruent?




a. $\overset{\frown}{AB} \cong \overset{\frown}{CD}$
b. $\overset{\frown}{AE} \cong \overset{\frown}{PR}$
c. $\overset{\frown}{BE} \cong \overset{\frown}{QR}$
d. $\overset{\frown}{CD} \cong \overset{\frown}{PQ}$

____ 15. If $m\overset{\frown}{KM} = 112°$, find $m\overset{\frown}{LM}$.

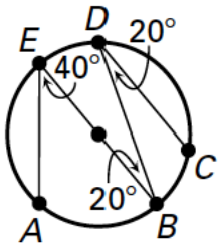



a. 100°
b. 124°
c. 112°
d. 236°

____ 16. In the same circle, or in congruent circles, two chords are congruent if and only if _____?_____.

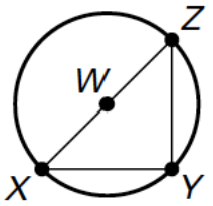
a. they are equidistant from the center
b. they are parallel
c. their endpoints form two pairs of congruent arcs
d. the same diameter perpendicularly bisects both chords

____ 17. Find $m\overset{\frown}{AE}$ and $m\overset{\frown}{CD}$.



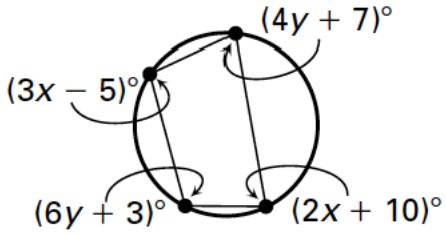

a. 80°; 80°
b. 40°; 80°
c. 100°; 80°
d. 100°; 100°

____ 18. Which statement is not necessarily true of $\odot W$?



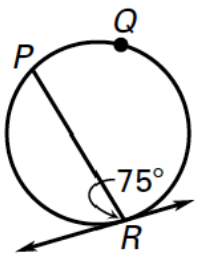

a. $m\angle XYZ = 90°$
b. $\overline{WZ} \cong \overline{WX}$
c. $\overline{XY} \cong \overline{YZ}$
d. $m\overset{\frown}{XYZ} = 180°$

____ 19. Find $x$ and $y$.



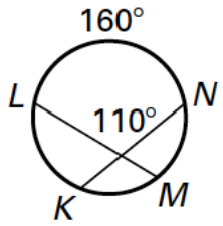

a. 42; 10
b. 35; 17
c. $\frac{17}{2}; \frac{35}{2}$
d. 21; 5

____ 20. Find $m\overset{\frown}{PQR}$.



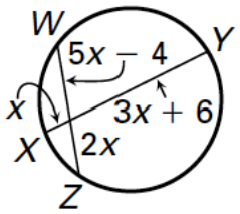

a. 285°
b. 105°
c. 210°
d. 185°

____ 21. Find $m\overset{\frown}{KM}$.



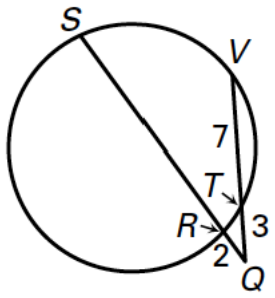

a. 70°
b. 20°
c. 110°
d. 60°

____ 22. Find $XY$ and $WZ$.



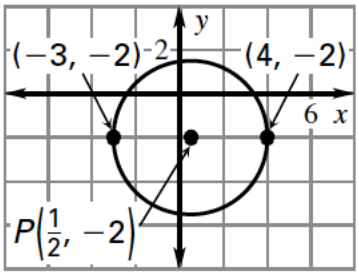

a. 14; 10
b. 12; 10
c. $19\frac{1}{3}$; $19\frac{1}{3}$
d. 8; 12

____ 23. Find *RS*.




a. 10
b. 8
c. 12
d. 13

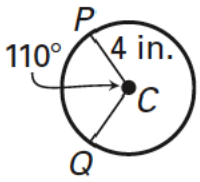
____ 24. Write the standard equation of the circle with center *P*.




a. $(x-2)^2-\left(y+\frac{1}{2}\right)=49$
b. $\left(x-\frac{1}{2}\right)^2+(y+2)^2=\frac{49}{4}$
c. $\left(x+\frac{1}{2}\right)^2+(y-2)=49$
d. $(x+2)^2-\left(y-\frac{1}{2}\right)=\frac{49}{4}$

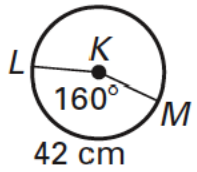
____ 25. Find the diameter of a ball that rolls 100 feet after 60 revolutions. Round to the nearest hundredth.
a. 0.53 ft
b. 0.27 ft
c. 5.24 ft
d. 2.62 ft

____ 26. Find the length of $\overset{\frown}{PQ}$ to the nearest hundredth.



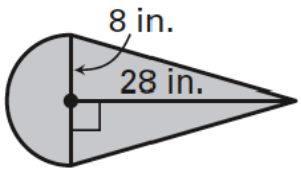

a. 2.44 in.
b. 7.68 in.
c. 15.35 in.
d. 3.84 in.

____ 27. Find the circumference of $\odot K$.




a. 100 cm
b. 94.5 cm
c. 117.2 cm
d. 138 cm

____ 28. Find the area of the figure, rounded to the nearest hundredth.




a. 130.48 in.$^2$
b. 212.48 in.$^2$
c. 324.53 in.$^2$
d. 280.96 in.$^2$

____ 29. The apothem of a regular polygon inscribed in a circle is the _____?_____.

a. distance from the center to any side of the polygon
b. center of the polygon
c. arc length intercepted by each side of the polygon
d. central angle of the polygon

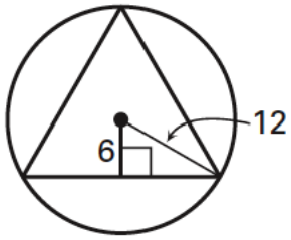
____ 30. Find the side length of a 15-sided regular polygon with apothem $a = 6$ inches and area $A = 282$ square inches.

a. $18\frac{4}{5}$ in.
b. 94 in.
c. $6\frac{4}{15}$ in.
d. $12\frac{8}{15}$ in.

____ 31. Which is *not* true about the probability of an event?

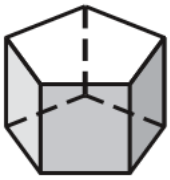
a. It can be expressed as a fraction, decimal, or percent.
b. It is the measure of the likelihood that an event will occur.
c. The probability of event $A$ can be written as $P(A)$.
d. It is a number $x$ such that $0 < x < 1$.

____ 32. Find the probability that a randomly chosen point in the circle also lies in the triangle.



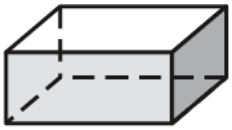

a. 28%
b. 41%
c. 56%
d. 45%

____ 33. Which figure is *not* a polyhedron?

a. 

c. 

b. 

d. 

____ 34. Which equation represents Euler's Theorem?

a. $F+V=E+2$
b. $F+E=V+2$
c. $E+V=F+2$
d. $F+V=E-2$

____ 35. A polyhedron in which the base is a polygon and the lateral faces are triangles with a common vertex is a _____?_____.

a. prism
b. cone
c. pyramid
d. dodecahedron

____ 36. Find the volume of a 6-inch tall glass with a 3-inch diameter.

a. 42.41 in.$^3$
b. 169.56 in.$^3$
c. 54 in.$^3$
d. 56.52 in.$^3$

____ 37. Find the surface area of a globe with a 24-inch diameter.

a. 1809.56 in.$^2$
b. 7234.56 in.$^2$
c. 904.32 in.$^2$
d. 3627.28 in.$^2$

____ 38. Which prism is similar to a prism with a length of 5 inches, width of 2 inches, and a height of $2\frac{1}{2}$ inches?

a. $l = 4$ in., $w = 1$ in., $h = 1\frac{1}{2}$ in.
c. $l = 10$ in., $w = 4$ in., $h = 4\frac{1}{2}$ in.
b. $l = 10$ in., $w = 7$ in., $h = 7\frac{1}{2}$ in.
d. $l = 2$ in., $w = \frac{4}{5}$ in., $h = 1$ in.

____ 39. How many possible outcomes are there when you roll two number cubes and toss one coin?

a. 13
c. 72
b. 36
d. 144

____ 40. The probability of an event occuring is 7 : 10. What are the odds against the event?

a. 3 : 10
c. 3 : 17
b. 10 : 3
d. 10 : 7

____ 41. According to a meteorologist, there is a 60% chance of thunderstorms today. What are the odds that it will *not* storm?

a. 3 : 5
c. 2 : 5
b. 2 : 3
d. 1: 25

____ 42. How many ways can you arrange all the letters in the word MATH?

a. 4
c. 12
b. 6
d. 24

____ 43. The judges of the science fair will be awarding ribbons for first, second, and third place, plus a ribbon for honorable mention out of 15 entries. Which expression gives the number of ways the judges can award first place, second place, third place, and honorable mention?

a. $\frac{4!}{11!}$
c. $\frac{11!}{15!}$
b. $\frac{15!}{11!}$
d. $\frac{11!}{4!}$

____ 44. You need to go to the library, grocery store, and pharmacy. In how many orders can you visit these places?

a. 3
c. 9
b. 6
d. 12

____ 45. What is the value of ${}_8P_5$?

a. 56
c. 6720
b. 120
d. 40,320

____ 46. What is the value of ${}_6C_3$?

a. 20
c. 240
b. 120
d. 1200

____ 47. How many combinations of 3 letters can you make from the list A, B, C, D, and E?

a. 10
c. 30
b. 20
d. 60

____ 48. You are ordering a 3-topping pizza from a pizzeria. You have 10 topping choices. How many different pizzas are possible?

a. 60
b. 120
c. 720
d. 5040

____ 49. You roll a number cube. What is the probability that you will roll an even number *or* a number greater than 4?

a. $0.1\overline{6}$
b. 0.5
c. $0.\overline{6}$
d. $0.8\overline{3}$

____ 50. You flip a coin and roll a number cube. What is the probability that the coin shows tails and the number cube shows a 3?

a. $\frac{2}{3}$
b. $\frac{1}{2}$
c. $\frac{1}{6}$
d. $\frac{1}{12}$

____ 51. A jar contains 6 red marbles, 5 blue marbles, and 9 green marbles. What is the probability of randomly choosing a blue marble and then another blue marble if the first marble is not replaced?

a. $\frac{1}{20}$
b. $\frac{1}{19}$
c. $\frac{1}{18}$
d. $\frac{1}{16}$

____ 52. The distribution of the number of pets per household is shown in the table below. What is the probability that the number of pets in a randomly chosen household is at least 2?

| Pets | 0 | 1 | 2 | 3+ |
|---|---|---|---|---|
| Households | 50 | 100 | 75 | 75 |

a. 0.25
b. 0.75
c. 0.5
d. 1.00

____ 53. What is the probability of $P(A \text{ and } B)$ given that $P(A) = 0.20$, $P(B) = 0.45$, and $P(A \text{ or } B) = 0.58$?

a. 0.07
b. 0.93
c. 0.97
d. 1.00

____ 54. If $P(A) = 0.1997$, what is $P\left(\overline{A}\right)$?

a. 0.0003
b. 0.8003
c. 0.9003
d. 1.1997

____ 55. You toss a coin and roll a six-sided die simultaneously. What is the probability of tossing a head and rolling a 5?

a. $\frac{1}{12}$
b. $\frac{1}{6}$
c. $\frac{2}{3}$
d. $\frac{5}{6}$

____ 56. What is the probability that you randomly draw four aces consecutively from a standard deck of 52 cards without replacement?

a. $\frac{1}{7,311,616}$

b. $\frac{3}{913,952}$

c. $\frac{1}{270,725}$

d. $\frac{1}{13}$

# Qtr 3 Practice
## Answer Section

### MULTIPLE CHOICE

1. ANS: A PTS: 1 DIF: Level B
   NAT: NT.CCSS.MTH.10.9-12.G.CO.4 | NT.CCSS.MTH.10.9-12.G.CO.2
   TOP: Standardized Test, Chapter 9 MSC: DOK 1
2. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.N.VM.11
   TOP: Standardized Test, Chapter 9 MSC: DOK 1
3. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.N.VM.8
   TOP: Standardized Test, Chapter 9 MSC: DOK 1
4. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.N.VM.8
   TOP: Standardized Test, Chapter 9 MSC: DOK 2
5. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.CO.2
   TOP: Standardized Test, Chapter 9 MSC: DOK 2
6. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.N.VM.11
   TOP: Standardized Test, Chapter 9 MSC: DOK 1
7. ANS: C PTS: 1 DIF: Level B
   NAT: NT.CCSS.MTH.10.9-12.G.CO.4 | NT.CCSS.MTH.10.9-12.G.CO.2
   TOP: Standardized Test, Chapter 9 MSC: DOK 2
8. ANS: A PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 9
   MSC: DOK 2
9. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.CO.3
   TOP: Standardized Test, Chapter 9 MSC: DOK 2
10. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.N.VM.11
    TOP: Standardized Test, Chapter 9 MSC: DOK 1
11. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 2
12. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 10
    MSC: DOK 1
13. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 1
14. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 2
15. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 1
16. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 1
17. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 2
18. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 2
19. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 2
20. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
    TOP: Standardized Test, Chapter 10 MSC: DOK 1

21. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
TOP: Standardized Test, Chapter 10 MSC: DOK 1
22. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
TOP: Standardized Test, Chapter 10 MSC: DOK 2
23. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.2
TOP: Standardized Test, Chapter 10 MSC: DOK 1
24. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 10
MSC: DOK 1
25. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.5
TOP: Standardized Test, Chapter 11 MSC: DOK 2
26. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.5
TOP: Standardized Test, Chapter 11 MSC: DOK 1
27. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.5
TOP: Standardized Test, Chapter 11 MSC: DOK 1
28. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.C.5
TOP: Standardized Test, Chapter 11 MSC: DOK 2
29. ANS: A PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 1
30. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 2
31. ANS: D PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 1
32. ANS: B PTS: 1 DIF: Level B
NAT: NT.CCSS.MTH.10.9-12.G.SRT.8 | NT.CCSS.MTH.10.9-12.S.CP.1
TOP: Standardized Test, Chapter 11 MSC: DOK 2
33. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 1
34. ANS: A PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 1
35. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 1
36. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.GMD.3
TOP: Standardized Test, Chapter 11 MSC: DOK 1
37. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.G.GMD.3
TOP: Standardized Test, Chapter 11 MSC: DOK 1
38. ANS: D PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 11
MSC: DOK 2
39. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 1
40. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
41. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
42. ANS: D PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 1
43. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2

44. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 1
45. ANS: C PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 1
46. ANS: A PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
47. ANS: A PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
48. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
49. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.7
TOP: Standardized Test, Chapter 12 MSC: DOK 2
50. ANS: D PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.8
TOP: Standardized Test, Chapter 12 MSC: DOK 2
51. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.8
TOP: Standardized Test, Chapter 12 MSC: DOK 2
52. ANS: B PTS: 1 DIF: Level B TOP: Standardized Test, Chapter 12
MSC: DOK 2
53. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.7
TOP: Standardized Test, Chapter 12 MSC: DOK 2
54. ANS: B PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.1
TOP: Standardized Test, Chapter 12 MSC: DOK 1
55. ANS: A PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.8
TOP: Standardized Test, Chapter 12 MSC: DOK 2
56. ANS: C PTS: 1 DIF: Level B NAT: NT.CCSS.MTH.10.9-12.S.CP.8
TOP: Standardized Test, Chapter 12 MSC: DOK 2