Mr. Q's Honors Geometry Christmas Break 2012 Homework!
To keep you fit during the off-season and ready for the New Year!

All of the questions are multiple choice. At the end of each assessment are the answers. Do NOT look at the answers before completing the assessment. That defeats the entire purpose of this if you do! Complete the assessment on a separate sheet of paper and show your work (if possible), check your answers, highlight which questions you got wrong, and redo those questions on another sheet of paper. If you redo a question and still did NOT get the correct answer, write it down and we'll go over it in class.

It is OK to get questions wrong just as long as you learn from your mistakes!

You will have your mom or dad sign this sheet below stating that you completed the assessment, checked your answers, redid the questions you got wrong, and writing the date of completion.

Do NOT wait until the night before school starts or even worse the morning of the first day of school to complete this assignment!

Chapter 1 Standardized Test #s 1-11, 15

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Chapter 2 Standardized Test #s 1-3, 5, 6, 8-13

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Chapter 3 Standardized Test #s 1-10, 12, 13, 14

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Chapter 4 Standardized Test #s 1-12, 16

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Chapter 5 Standardized Test #s 1, 2, 10, 11, 12

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Chapter 6 Standardized Test #s 1, 3, 4, 5-10

Parent's signature: ________________________________ Date: ________________________________

Questions to go over in class: ________________________________

Questions to go over in class: ________________________________
Multiple Choice

1. Which statement about the figure is true?

   A) Lines x and y intersect at point A.
   B) Points A, B, and C are collinear.
   C) EC and ED are opposite rays.
   D) Another name for AE is AB.

2. Name three points that are collinear.

   A) G, H, and I
   B) H, G, and J
   C) F, G, and I
   D) G, J, and I

3. What is the intersection of plane HGY and plane HFX?

   A) HZ
   B) HZ
   C) Point H
   D) Plane EFH

4. What is the length of ST?

   A) 2
   B) 4
   C) −2
   D) 6

5. If WX = XY, what is the length of WZ?

   A) 7
   B) 10
   C) 3
   D) 4

6. The endpoints of CD are C(6, 1) and D(−4, −1). Find the midpoint M of CD.

   A) M(10, 2)
   B) M(−10, −2)
   C) M(2, 0)
   D) M(1, 0)

7. JK has a length of 4.5 units. If LM has endpoints L(3, 1) and M(−1, 4), how much longer than JK is LM?

   A) 0.5 unit
   B) 2 units
   C) 2.5 units
   D) JK is longer.

8. Name the acute angles in the given figure.

   A) ∠CAD and ∠DAE
   B) ∠BAC and ∠FAE
   C) ∠BAF and ∠CAE
   D) ∠BAD and ∠FAD

9. If the measure of ∠RST is 134°, find the measure of ∠QST.

   A) 67°
   B) 33°
   C) 34°
   D) 98°

10. m∠A is 42° greater than m∠B. If m∠A and m∠B are supplementary, find m∠A and m∠B.

    A) m∠A = 111°, m∠B = 69°
    B) m∠A = 42°, m∠B = 48°
    C) m∠A = 42°, m∠B = 138°
    D) m∠A = 66°, m∠B = 24°
11. Name a pair of vertical angles in the figure shown.

\[ \measuredangle 2 \text{ and } \measuredangle 4 \quad \text{or} \quad \measuredangle 1 \text{ and } \measuredangle 4 \]

(A) \( \measuredangle 2 \) and \( \measuredangle 4 \)  (B) \( \measuredangle 1 \) and \( \measuredangle 4 \)

(C) \( \measuredangle 3 \) and \( \measuredangle 5 \)  (D) There are none.

12. Which describes the following polygon?

(A) equilateral  (B) equiangular  (C) regular  (D) none of these

13. Which of the following is a convex polygon?

(A) \( \star \)  (B) \( \mathbb{R} \)

(C)  (D) \( \bullet \)

14. Find the area of a circle with a radius of 4 feet. Use 3.14 for \( \pi \).

(A) 25.12 ft\(^2\)  (B) 8 ft\(^2\)  

(C) 16 ft\(^2\)  (D) 50.24 ft\(^2\)

15. Find \( CD \).

(A) 5  (B) 28  (C) 56  (D) 96

16. Find the perimeter of the polygon.

(A) 12 units  (B) 16.97 units  (C) 28 units  (D) 11.31 units

17. Find the area, in square inches, of a triangle with vertices \( X(-7, 2) \), \( Y(8, 2) \), and \( Z(6, 7) \).

Gridded Answer

18. A swimmer stands somewhere in a circular pool. The distance to the farthest side (through the center of the pool) is 3 times the distance to the nearest side. The circumference of the pool is 100 feet.

(a) How close is the swimmer to the nearest side?

(b) How far must the swimmer swim to get to the center?

19. You are a surveyor. You take your first measurement facing due north. You turn to the right to take your second measurement and then right again, 4 times as far, to take your third measurement. You are now facing due west.

(a) How many degrees did you turn to take your second measurement?

(b) How many degrees should you have turned after your second measurement if you wanted to take your third measurement facing south?

(c) How many degrees must you turn to the left in order to take a fourth measurement in the opposite direction of your second measurement?
Answer Key

Chapter 1

Standardized Test

18. a. \( \frac{25}{\pi} \) ft  b. \( \frac{75}{\pi} \) ft

19. a. 54°  b. 126°  c. 36°
Multiple Choice

1. What is the next letter in the sequence?
   A. B, D, G, K,
   B. O
   C. P
   D. Q

2. What conjecture can be made if John is older than Mark, Sue is older than John, and Betty is younger than Sue?
   A. John is younger than Betty.
   B. Sue is the oldest.
   C. Mark is the youngest.
   D. none of these

3. What is the converse of the given statement?
   GIVEN: If \( m\angle B = 90\degree \), then \( \angle B \) is a right angle.
   A. If \( m\angle B \neq 90\degree \), then \( \angle B \) is not a right angle.
   B. If \( m\angle B = 90\degree \), then \( \angle B \) is not a right angle.
   C. If \( \angle B \) is not a right angle, then \( m\angle B \neq 90\degree \).
   D. If \( \angle B \) is a right angle, then \( m\angle B = 90\degree \).

4. Which statement’s inverse is true?
   A. If two lines intersect to form a right angle, then they are perpendicular lines.
   B. If \( m\angle W \) is less than 45\degree, then \( \angle W \) is acute.
   C. If point \( K \) is the midpoint of \( JL \), then points \( J, K, \) and \( L \) are collinear.
   D. If two rays are opposite rays, then they have a common endpoint.

5. If all sides of a polygon are congruent, the polygon is equilateral. All sides of polygon \( A \) are 5 inches. Using the Law of Detachment, which conclusion can be made?
   A. Polygon \( A \) is congruent.
   B. Polygon \( A \) is equilateral.
   C. All polygon sides are 5 inches.
   D. All polygons are equilateral.

6. If point \( B \) is the midpoint of \( AC \), then point \( B \) bisects \( AC \). If point \( B \) bisects \( AC \), then \( AB \equiv BC \). Using the Law of Syllogism, what conclusion can be drawn?
   A. If point \( B \) is the midpoint of \( AC \), then \( AB \equiv BC \).
   B. If \( AB \equiv BC \), then point \( B \) bisects \( AC \).
   C. If \( AB \equiv BC \), then point \( B \) is the midpoint of \( AC \).
   D. Points \( A, B, \) and \( C \) are collinear.

7. Which statement is not a point, line, or plane postulate?
   A. A plane contains at least 3 noncollinear points.
   B. If 2 lines intersect, then their intersection is exactly 1 point.
   C. A line contains at least 2 points.
   D. Coplanar points are points that lie on the same plane.

8. Which of the following statements can be determined from the figure?
   A. \( \angle ABL \equiv \angle JBK \)
   B. Points \( A, B, \) and \( J \) are collinear.
   C. \( JM \) bisects \( LK \).
   D. \( CK \perp AC \)
9. Which property of equality does the statement represent?
   **Given:** For any angles \( \angle A \) and \( \angle B \), if \( m\angle A = m\angle B \), then \( m\angle B = m\angle A \).
   \( \text{A) distributive} \quad \text{B) transitive} \quad \text{C) symmetric} \quad \text{D) reflexive} \)

10. The formula for the area of a circle is \( A = \pi r^2 \). Use the properties of equality to find the radius of a circle with an area of 100 square inches.
   \( \text{A) } \frac{100}{\pi} \quad \text{B) } \frac{10}{\sqrt{\pi}} \quad \text{C) } \frac{10}{\pi} \quad \text{D) } \frac{100}{\sqrt{\pi}} \)

11. Using the Transitive Property of Angle Congruence, if \( \angle A \equiv \angle B \) and \( \angle B \equiv \angle C \), then \( \square \).
   \( \text{A) } \angle A \equiv \angle C \quad \text{B) } \angle A, \angle B, \text{ and } \angle C \text{ are right angles} \quad \text{C) } \angle A \text{ and } \angle C \text{ are supplementary} \quad \text{D) } \angle A \text{ and } \angle C \text{ are complementary} \)

12. The statement \( \overline{XY} \equiv \overline{XY} \) illustrates which property?
   \( \text{A) Transitive Property of Equality} \quad \text{B) Reflexive Property of Segment Congruence} \quad \text{C) Substitution Property of Equality} \quad \text{D) Symmetric Property of Segment Congruence} \)

13. \( \angle P \) and \( \angle Q \) are supplementary. If \( m\angle P \) is double \( m\angle Q \), find \( m\angle P \) and \( m\angle Q \).
   \( \text{A) } m\angle P = 30°, m\angle Q = 60° \quad \text{B) } m\angle P = 60°, m\angle Q = 30° \quad \text{C) } m\angle P = 60°, m\angle Q = 120° \quad \text{D) } m\angle P = 120°, m\angle Q = 60° \)

14. At 1:00 p.m. a thermometer reads 76°. A cold front moves in and drops the temperature 1.5° every half hour for the next 3.5 hours. What is the temperature at 4:30 p.m.?

\[ \begin{array}{c|c|c|c|c} \hline \text{Hour} & 1 & 1.5 & 2 & 4.5 \\
\text{Temperature} & 76 & 74.5 & 73 & 69 \ \\
\hline \end{array} \]

15. What is the next number in the sequence: 3, 9, 21, 45, 93, \ldots? Write an equation that represents the sequence.

16. A full 20-gallon gas tank has a gauge as shown.

You travel until you have a \( \frac{1}{4} \) tank of fuel remaining.
   a. How many degrees did the gauge turn?
   b. How many gallons of gas are left in the tank?
   c. You continue traveling until the tank is empty. You fill up the tank to \( \frac{7}{8} \) full. How many degrees did the gauge turn while filling up?
   d. How many gallons did you get?
Answer Key

Chapter 2

Standardized Test
14. 65.5°  15. 189; \( n = 2x + 3 \)  16. a. 135°  b. 5  c. 157.5°  d. 12.5
Multiple Choice

1. Which pair of angles are corresponding angles?
   - A) \( \angle 1 \) and \( \angle 8 \)
   - B) \( \angle 3 \) and \( \angle 7 \)
   - C) \( \angle 3 \) and \( \angle 5 \)
   - D) \( \angle 2 \) and \( \angle 7 \)

2. What is one way to describe the vertical bars of a football goalpost?
   - A) perpendicular
   - B) intersecting
   - C) skew
   - D) parallel

3. If two angles lie between two lines and on opposite sides of a transversal, then the angles are ___.
   - A) consecutive interior angles
   - B) alternate interior angles
   - C) alternate exterior angles
   - D) corresponding angles

4. Find \( m\angle 1 \).
   - A) 34°
   - B) 45°
   - C) 124°
   - D) 56°

5. Based on the diagram, which theorem would you use to support the statement \( m\angle A + m\angle B = 180^\circ \)?
   - A) Alternate Interior Angles Theorem
   - B) Alternate Exterior Angles Theorem
   - C) Consecutive Interior Angles Theorem
   - D) Parallel Lines Theorem

6. Find \( x \) and \( y \).
   - A) \( x = 11, y = 8 \)
   - B) \( x = 12, y = 8 \)
   - C) \( x = 8, y = 11 \)
   - D) \( x = 11, y = 12 \)

7. If two lines are cut by a transversal so the alternate exterior angles are congruent, then the lines are ___.
   - A) intersecting
   - B) parallel
   - C) congruent
   - D) perpendicular

8. What value must \( x \) be in order to conclude \( Q \parallel R \)?
   - A) 36
   - B) 45
   - C) 60
   - D) 72
9. Describe the slope of the line passing through points $A(-2, 3)$ and $B(4, -3)$.
   - A) positive  
   - B) negative  
   - C) zero  
   - D) undefined

10. Find the slope of a ladder placed 4 feet from the wall and touching the wall at a height of 12 feet.
    - A) 3  
    - B) -3  
    - C) $\frac{1}{3}$  
    - D) $-\frac{1}{3}$

11. What is the equation of the line through point $(2, 1)$ and perpendicular to the line through $(-4, 1)$ and $(3, -2)$?
    - A) $y = \frac{7}{3}x + \frac{11}{3}$  
    - B) $y = \frac{3}{7}x + \frac{11}{3}$  
    - C) $y = \frac{-3}{7}x - \frac{11}{3}$  
    - D) $y = \frac{7}{3}x - \frac{11}{3}$

12. Write an equation of the line with slope $= -2$ and y-intercept $= 5$.
    - A) $y = -5x + 2$  
    - B) $y = 2x - 5$  
    - C) $y = 5x - 2$  
    - D) $y = -2x + 5$

13. What best describes the relationship between line $6x - 2y = 1$ and line $x + 3y = 12$?
    - A) parallel  
    - B) perpendicular  
    - C) skew  
    - D) equivalent

14. Find $x$ if $\overrightarrow{CD} \perp \overrightarrow{FG}$.
    - A) 18  
    - B) 30  
    - C) 15  
    - D) 90

15. Find the distance between points $(-5, 4)$ and $(10, 12)$.

16. Persons A and B stand directly across the street from each other. Person A crosses the street to get to a restaurant while person B crosses the street to get to a music store. If they both walk the same distance, what can be said about the distance between person A and the music store and the distance between person B and the restaurant? Will this always be the case? Explain.

17. You race your bike at a speed of 20 miles per hour. Your friend races at a speed of 25 miles per hour. Suppose your friend decides to give you a 30-mile head start.
   a. Draw a graph plotting the progress of both bikers in a 7-hour race.
   b. Write an equation for each of the two lines.
   c. Is there a relationship between the slope of each line and the race? the y-intercept and the race? Explain.
   d. Who would win a 5-hour race? a 6-hour race? a 7-hour race? Who would win if the slopes were equal?
**Answer Key**

**Chapter 3**

**Standardized Test**

14. C  15. 17  16. They are equal; yes; SAS

17. a. [Graph]

b. your line: \( y = 20x + 30 \); friend’s line: \( y = 25x \)  
c. slope is the miles per hour; \( y \)-intercept is the head start

d. 5-hour race: you; 6-hour race: tie; 7-hour race: friend; equal slopes: you; because speed would be equal and you had a head start.
6. Which statement can you not conclude from the diagram?

- A \( \triangle QPS \cong \triangle SPR \)
- B \( \triangle PQR \cong \triangle QRS \)
- C \( \triangle QPT \cong \triangle PTR \)
- D \( PQ \cong RS \)

7. In a right triangle, the sides adjacent to the right angle are called the legs. The side opposite the right angle is called the _____.

- A transversal
- B diagonal
- C hypotenuse
- D diameter

8. To prove \( \triangle KLM \cong \triangle KLN \), which triangle congruence postulate could you use?

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

9. Given \( \triangle DEF \cong \triangle WXY \), use the Hypotenuse-Leg Congruence Theorem to find \( x \).

- A 30
- B 45
- C 60
- D 90
10. Use the diagram to determine which statement is true.

\[ \text{KJ} \equiv \text{KL} \quad \text{B} \quad \angle \text{KJP} \equiv \angle \text{MNP} \quad \text{C} \quad \angle \text{KLP} \equiv \angle \text{MLP} \quad \text{D} \quad \text{LP} \perp \text{JN} \]

11. The angle formed by the legs of an isosceles triangle is called the ____________.
   \( \text{A} \) vertex angle \quad \text{B} \) base angle \quad \text{C} \) isosceles angle \quad \text{D} \) leg angle

12. How many isosceles triangles can be found?
   \( \text{A} \) 2 \quad \text{B} \) 0 \quad \text{C} \) 6 \quad \text{D} \) 4

13. Which of the following is not a type of congruence transformation?
   \( \text{A} \) translation \quad \text{B} \) rotation \quad \text{C} \) refraction \quad \text{D} \) reflection

14. Given a triangle with vertices \( A(4, -1), \ B(-3, 0), \text{ and } \ C(7, 2) \), which points represent a reflection of \( \triangle ABC \) in the \( y \)-axis?
   \( \text{A} \) \( A(-4, -1), \ B(3, 0), \ C(-7, 2) \)
   \( \text{B} \) \( A(4, 1), \ B(-3, 0), \ C(7, -2) \)
   \( \text{C} \) \( A(-4, 1), \ B(3, 0), \ C(-7, -2) \)
   \( \text{D} \) \( A(-1, 4), \ B(0, -3), \ C(2, 7) \)

15. Find the value of \( x \).

\[ (3x - 1) \quad (4x - 1) \]

16. Match the theorem with the correct pair of congruent triangles.
   a. ASA
   b. SAS
   c. HL
   d. SSS
   e. AAS

17. Use the diagram.
   a. Find all segments congruent to \( AB \).
   b. Find all triangles congruent to \( \triangle ABC \).
   c. Find all angles congruent to \( \angle BEC \).
   d. Find all right triangles. Explain.
Answer Key

Chapter 4
Standardized Test


17. a. Using the distance formula, \( AB = BC = CD = DA \). b. Using the distance formula and SSS, or HL, \( \triangle ABC \equiv \triangle ADC \).
   c. Using the distance formula and SSS, \( \triangle BEC \equiv \triangle BEA \equiv \triangle AED \equiv \triangle CED \).
   d. Using the distance formula and HL, \( \triangle AEB, \triangle CEB, \triangle CED, \) and \( \triangle AED \) are right triangles.
Multiple Choice

1. The segment connecting the midpoints of two sides of a triangle is parallel to the third side and is ___.
   - A) twice as long
   - B) half as long
   - C) one third as long
   - D) the same length

2. If RS, RT, ST, WY, WZ, and YZ are all mid segments, find x.

3. If QS is the perpendicular bisector of PR, find RS.

4. By the Concurrency of Perpendicular Bisectors Theorem, if QJ, QK, and QL are perpendicular bisectors, then ___.
   - A) \( \angle JQK \equiv \angle KQL \equiv \angle LQJ \)
   - B) \( DE = EF = FD \)
   - C) \( QD = QE = QF \)
   - D) \( \angle EQK \equiv \angle FQL \equiv \angle DQJ \)

5. Point A is the incenter of \( \triangle FGH \). Find \( AS \).
   - A) 3
   - B) 2
   - C) 4
   - D) 5

6. Given the inscribed circle with center K, which statement can you not conclude?
   - A) \( XK \parallel YZ \)
   - B) \( \angle NZK \equiv \angle OZK \)
   - C) \( NK \parallel YZ \)
   - D) \( MK = OK \)

7. The point of concurrency of the three medians of a triangle is called the ___.
   - A) tri-sector point
   - B) centristino
   - C) median point
   - D) centroid

8. If point P is the centroid of \( \triangle ABC \), find CP.
   - A) 5
   - B) \( \frac{10}{3} \)
   - C) \( \frac{5}{3} \)
   - D) \( \frac{7}{3} \)

9. Which is the longest side of \( \triangle DEF \)?
   - A) DE
   - B) DF
   - C) EF
   - D) cannot be determined
10. Which is a possible value of $x$?

A. 2  
B. 4  
C. 14  
D. 17

11. Using the Hinge Theorem and the diagram, you can conclude:

A. $\angle KLM < \angle QSR$  
B. $QS = LM$  
C. $PS > LM$  
D. none of these

12. Based on the diagram, which is a true statement?

A. $\angle A > \angle D$  
B. $\angle A < \angle D$  
C. $\angle A = \angle D$  
D. $E$ is the midpoint of $BC$.

13. $G$ is the centroid of $\triangle MNP$ and $JP = 21$. Find the perimeter of $\triangle MJR$.

14. In $\triangle PQR$, $PQ = 20$ and $PR = 9$. Write an inequality to show all possible values for $QR$.

15. A campground has a convenience store located 100 yards due south of the shower facilities. There is a game room 100 yards due east of the convenience store.

a. Camper A leaves the game room for the shower. What is the shortest travel distance possible?

b. Camper B is doing laundry half way between the game room and the convenience store. Find the shortest distance Camper B can travel to get to the pool located half way between the store and the shower.

c. Camper C is lost, standing at the convenience store facing west. If his tent is equidistant from the store, the shower, and the game room, provide two-step instructions to get Camper C back to the tent.
**Answer Key**

**Chapter 5**

**Standardized Test**

1. B  
2. D  
3. B  
4. C  
5. A  
6. A  
7. D  
8. B  
9. A  
10. B  
11. C  
12. A  
13. 43  
14. 11 < QR < 29  
15. a. 141.4 yd

b. By the Pythagorean Theorem, \(a^2 + b^2 = c^2\), so \(50^2 + 50^2 = c^2\) and \(c = 70.7\). By the Midsegment Theorem, because the pool and laundry room are midpoints, the distance from the laundry room to the pool is half the distance from the game room to the shower.

c. Turn clockwise 135° and walk forward 70.7 yards.
Multiple Choice

1. A rectangle is 5/8 as wide as it is long. How wide is the rectangle if it is 10 inches long?
   - A 8 in.   - B 16 in.
   - C 5 3/4 in.   - D 6 1/4 in.

2. Find the geometric mean of 8 and 32.
   - A 20   - B 16   - C 24   - D 12

3. One serving of a cookie recipe calls for 6 tablespoons of sugar. If one serving makes enough for 4 people, how much sugar is needed to serve 10 people?
   - A 15 Tbs   - B 60 Tbs
   - C 12 Tbs   - D 24 Tbs

4. If the corresponding angles of two polygons are congruent and the corresponding side lengths are proportional, then the two polygons are ___.
   - A regular   - B concave
   - C similar   - D equilateral

5. Given \( \triangle ABC \sim \triangle RST \), find the perimeter of \( \triangle RST \) if the scale factor of \( \triangle ABC \) to \( \triangle RST \) is 3/2.
   - A 36   - B 81   - C 54   - D 27

6. If two angles of one triangle are congruent to two angles of another triangle, then the triangles are ___.
   - A equilateral   - B congruent
   - C equiangular   - D similar

7. Use the Angle-Angle Similarity Postulate to determine which pair of triangles is not similar.

8. Find \( x \).
   - A 2   - B 32   - C 42   - D 38

9. If \( \triangle PQR \sim \triangle FGH \), find \( QR \).
   - A \( \frac{3}{2} \)   - B 2   - C 1   - D 3

10. Which Similarity Theorem can be used to show \( \triangle ABC \sim \triangle DBE \)?
    - A SSS
    - B AA
    - C SAS
    - D AAS

11. If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides ___.
    - A equally   - B proportionally
    - C congruently   - D perpendicularly
12. Use the Triangle Proportionality Theorem to find $MK$.

- **A** 3
- **B** 3.75
- **C** 3.5
- **D** 3.25

13. Find $SU$.

- **A** 12
- **B** 4
- **C** 6
- **D** 16

14. Find $YZ$.

- **A** 9
- **B** 10
- **C** 6
- **D** 8

15. Which of the following set of points could form a dilation of a polygon with vertices $A(-3, 3), B(-3, 1), C(0, 1),$ and $D(6, 6)$?

- **A** $W(3, -3), X(3, -1), Y(0, -1), Z(-6, 6)$
- **B** $W(-2, 4), X(-2, 2), Y(1, 2), Z(7, 7)$
- **C** $W(-6, 6), X(-6, 2), Y(0, 2), Z(12, 12)$
- **D** $W(-3, 6), X(-3, 2), Y(0, 2), Z(6, 12)$

16. Find $m$.

Short Response

17. Fold a 8.5 in. $\times$ 11 in. sheet of paper, lengthwise, 4 times. Find the ratios of length, width, and area of each congruent rectangle formed to that of the original sheet of paper. Find the same ratios for 5 folds and 6 folds.

Extended Response

18. A photography company sells school picture packages as shown.

<table>
<thead>
<tr>
<th>Selections</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 – 16 $\times$ 20</td>
</tr>
<tr>
<td>B</td>
<td>1 – 12 $\times$ 16</td>
</tr>
<tr>
<td>C</td>
<td>1 – 10 $\times$ 14</td>
</tr>
<tr>
<td>D</td>
<td>1 – 8 $\times$ 10</td>
</tr>
<tr>
<td>E</td>
<td>4 – 5 $\times$ 7</td>
</tr>
<tr>
<td>F</td>
<td>2 – 5 $\times$ 7</td>
</tr>
<tr>
<td>G</td>
<td>2 – 4 $\times$ 6</td>
</tr>
<tr>
<td>H</td>
<td>2 – 3 $\times$ 5</td>
</tr>
<tr>
<td>I</td>
<td>8 – 2 $\times$ 3</td>
</tr>
<tr>
<td>J</td>
<td>16 – 1.5 $\times$ 2</td>
</tr>
</tbody>
</table>

a. Which selection(s) have a price to square inch ratio smaller than 13 : 1?
b. Which portrait sizes are enlargement dilations of another size and by what scale factor?
c. If each selection prints in its entirety on one sheet of paper, which selections could print on congruent rectangles?
Answer Key

Chapter 6

Standardized Test

17. length is 1 : 1, width is 1 : 16, area is 1 : 16; After 5 folds: length is 1 : 1, width is 1 : 32, area is 1 : 32;
After 6 folds: length is 1 : 1, width is 1 : 64, area is 1 : 64
18. a. A, B, C, E
b. The 16 × 20 is an enlargement dilation of the 8 × 10 by a scale factor of 2 : 1. The 10 × 14 is an enlarge-
ment dilation of the 5 × 7 by a scale factor of 2 : 1. The 4 × 6 is an enlargement dilation of the 2 × 3 by a
scale factor of 2 : 1. The 12 × 16 is an enlargement dilation of the 1.5 × 2 by a scale factor of 8 : 1. c. C and