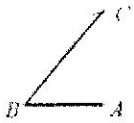
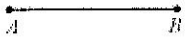
Chapter 1 Final Review

DO NOT WRITE ON THIS PAPER!

1. Describe each figure using geometric terms.

a. 

b. 

c. 

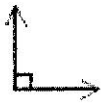
d. 

2. Classify each angle.

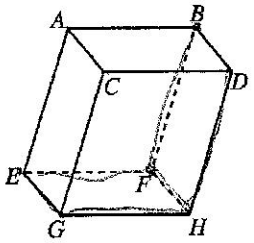
a.

b. 

c. 

d. 

USE THE FIGURE AT THE RIGHT FOR PROBLEMS 3, 4, AND 5.



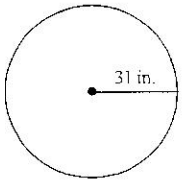
3. Which plane is parallel to plane *EFHG*?

4. Name the intersection of plane *BDF* and plane *EGH*.

5. Name the four labeled segments that are skew to $\overline{AC}$.

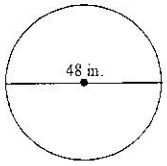
6. Alfred is practicing typing. The first time he tested himself, he could type 31 words per minute. After practicing for a week, he could type 37 words per minute. After two weeks he could type 43 words per minute. Based on this pattern, predict how fast Alfred will be able to type after 4 weeks of practice.

7. Find the circumference of the circle in terms of π.

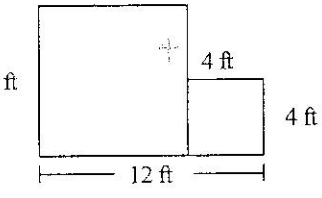


8. If $EF = 3x - 13$, $FG = 4x - 6$, and $EG = 30$, find the values of x, EF, and FG. The drawing is not to scale.

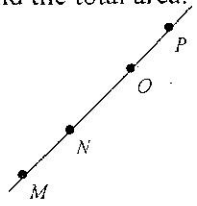
9. Find the area of the circle in terms of π.



10. The figure is formed from rectangles. Find the total area. The diagram is not to scale.

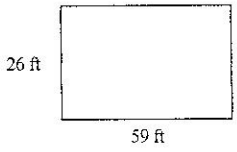


11. Name the ray that is opposite $\overrightarrow{OM}$.



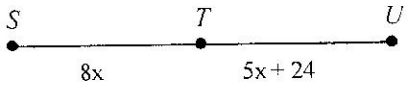
12. Find the distance between points $P(3, 5)$ and $Q(4, 2)$ to the nearest tenth.

13. Find the perimeter of the rectangle. The drawing is not to scale.

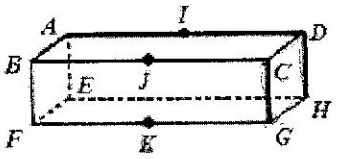


14. Find a counterexample to show that the conjecture is false.
Conjecture: Any number that is divisible by 3 is also divisible by 6.

15. If T is the midpoint of $\overline{SU}$, find the values of x and ST. The diagram is not to scale.



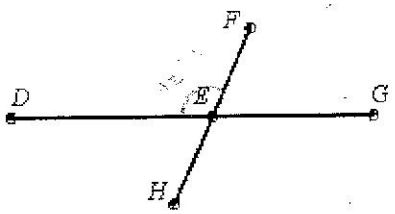
USE THE FIGURE AT THE RIGHT FOR PROBLEMS 16 AND 17.



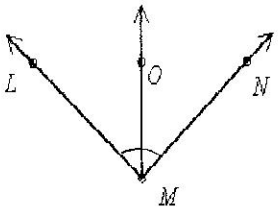
16. Are points C, G, and H collinear or noncollinear?

17. Name the plane represented by the front of the box.

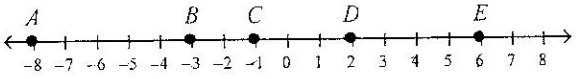
18. If $m\angle DEF = 120$, then what are $m\angle FEG$ and $m\angle HEG$? The diagram is not to scale.



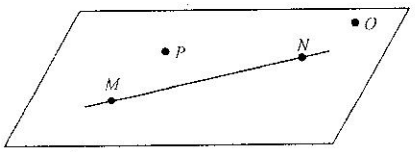
19. $\overrightarrow{MO}$ bisects $\angle LMN$, $m\angle LMN = 6x - 22$, $m\angle LMO = x + 39$. Find $m\angle NMO$. The diagram is not to scale.



20. Which point is the midpoint of $\overline{AE}$?

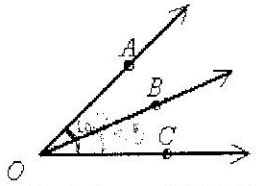


21. Name the line and plane shown in the diagram.



22. Name the ray in the figure.

23. If $m\angle BOC = 23$ and $m\angle AOC = 60$, then what is the measure of $\angle AOB$? The diagram is not to scale.



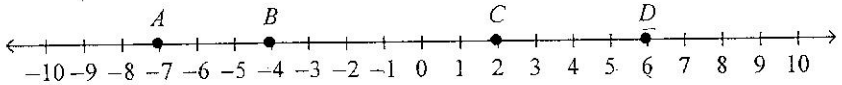
24. Find the coordinates of the midpoint of the segment whose endpoints are $H(8, 2)$ and $K(2, 4)$.

25. If the perimeter of a square is 148 inches, what is its area?

26. Based on the pattern, what are the next two terms of the sequence?

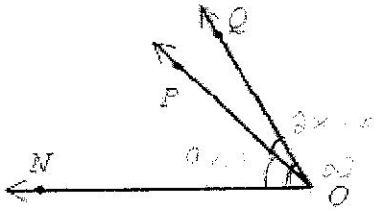
$7, \frac{7}{5}, \frac{7}{25}, \frac{7}{125}, \frac{7}{625}, \ldots$

27. Find AD.



28. If $AB = 17$ and $AC = 30$, find the length of $\overline{BC}$.

29. $m\angle QOP = (2x + 6)°$ and $m\angle NOP = (9x - 1)°$ and $m\angle QON = 60°$. Find $m\angle QOP$ and $m\angle NOP$.



Final Review Chapter One Answer Sheet

Name:_____

1a. _____ 1b. _____ 1c. _____ 1d. _____

2a. _____ 2b. _____ 2c. _____ 2d. _____

3. _____ 4. _____

5. _____ _____ _____ _____

6. _____ 7. _____ 8. $x =$_____ EF _____ FG _____

9. _____ 10. _____ 11. _____ 12. _____

13. _____ 14. _____ 15. $x =$_____ ST _____

16. _____ 17. _____ 18. $m\angle FEG$ _____ $m\angle HEG$ _____

19. _____ 20. _____ 21. _____ _____

22. _____ 23. _____ 24. _____ 25. _____

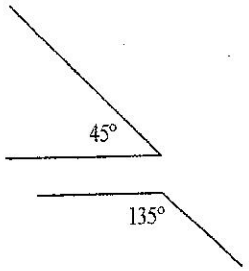
26. _____ _____ 27. _____ 28. _____

29. $m\angle QOP =$ _____ $m\angle NOP =$ _____

Chapter 2 Final Review

DO NOT WRITE ON THIS PAPER!

1. Rewrite the statement in if-then form.
   All rectangles have four sides.
2. Which statement is an example of the Addition Property of Equality?
   a. If $p = q$ then $p \cdot s = q \cdot s$
   b. If $p = q$ then $p - s = q - s$
   c. If $p = q$ then $p + s = q + s$.
   d. $p = q$
3. How are the two angles related?

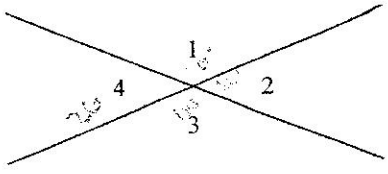


Drawing not to scale

4. Identify the property of congruence.
   $\angle Q \cong \angle Q$.
5. Name the Property of Congruence that justifies the statement:
   If $\angle P \cong \angle Q$ and $\angle Q \cong \angle R$, then $\angle P \cong \angle R$.
6. Use the Law of Syllogism to draw a conclusion from the two given statements.
   If two lines intersect and form right angles, the lines are perpendicular.
   If two lines are perpendicular, they intersect and form 90° angles.
7. Name the Property of Congruence that justifies the statement:
   If $\overline{RS} \cong \overline{UW}$, then $\overline{UW} \cong \overline{RS}$.
8. Use the Law of Detachment to draw a conclusion from the two given statements.
   If two angles are supplementary, then the sum of their measures is 180°.
   $\angle Y$ and $\angle Z$ are supplementary.

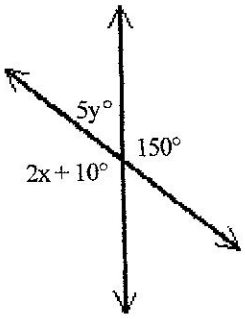
Use the given property to complete the statement.

9. Subtraction Property of Equality
   If $4x + 2 = 4$, then _____.
10. Transitive Property of Congruence
    If $\overline{MN} \cong \overline{LK}$ and $\overline{LK} \cong \overline{OP}$, then _____.
11. Substitution Property of Equality
    If $y = 5$ and $7x + y = 9$, then _____.
12. What is the converse of the following conditional?
    If a point is in the first quadrant, then its coordinates are positive.
13. $\angle DFG$ and $\angle JKL$ are complementary angles. $m\angle DFG = x + 5$, and $m\angle JKL = x - 3$. Find the measure of each angle.
14. $\overline{BD}$ bisects $\angle ABC$. $m\angle ABC = 4x + 28$. $m\angle ABD = 9x$. Find $m\angle DBC$.
15. $\angle 1$ and $\angle 2$ are supplementary angles. $m\angle 1 = x - 22$, and $m\angle 2 = x + 76$. Find the measure of each angle.
16. Name the Property of Equality that justifies the statement:
    If $r = s$, then $r \cdot t = s \cdot t$.
17. $m\angle 4 = 26$. Find $m\angle 2$.



Drawing not to scale

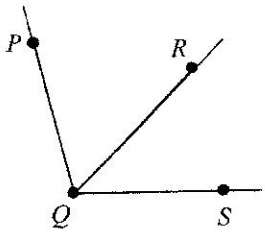
18. Find the values of x and y.



19. Identify the hypothesis and conclusion of this conditional statement:
If today is Wednesday, then tomorrow is Thursday.

Fill in each missing reason.

20. **Given:** $m\angle PQR = x + 3$, $m\angle SQR = x - 5$, and $m\angle PQS = 100$.
Find x.



Drawing not to scale

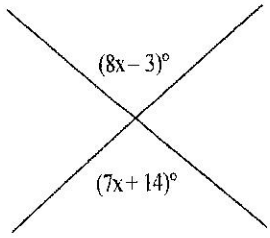
$m\angle PQR + m\angle SQR = m\angle PQS$	**a.** _____
$x + 3 + x - 5 = 100$	**b.** _____
$2x - 2 = 100$	**c.** _____
$2x = 102$	**d.** _____
$x = 51$	**e.** _____

21. **Given:** $9x - 6y = 2; x = -1$

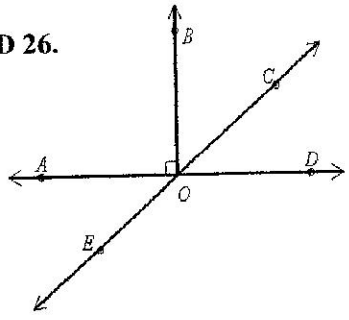
Prove: $\frac{-11}{6} = y$

$9x - 6y = 2; x = -1$	a. _____
$-9 - 6y = 2$	b. _____
$-6y = 11$	c. _____
$y = \frac{-11}{6}$	d. _____
$\frac{-11}{6} = y$	e. _____

22. Find the value of x.



USE THE FIGURE AT THE RIGHT FOR PROBLEMS 23, 24, 25, AND 26.



23. Name an angle supplementary to $\angle BOE$.

24. Name an angle complementary to $\angle BOC$.

25. Name an angle adjacent to $\angle AOE$.

26. Name an angle that forms a linear pair to $\angle COD$.

27. Write the following conditional and its converse as a biconditional.

If two lines intersect and form right angles, the lines are perpendicular.
If two lines are perpendicular, they intersect and form 90°

28. What is the inverse of this statement: *If she studies hard in math, then she will not fail.*

29. What is the contrapositive of this statement: *If you have 50 cents, then you cannot buy dollar toys.*

Final Review Chapter Two Answer Sheet

Name:_____

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. $m\angle DFG$_____ $m\angle JKL$ _____

14. _____

15. $m\angle 1$_____ $m\angle 2$ _____

16. _____

17. _____

18. x _____ y _____

19. hyp _____

con _____

20. **a.** _____

b. _____

c. _____

d. _____

e. _____

21. **a.** _____

b. _____

c. _____

d. _____

e. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

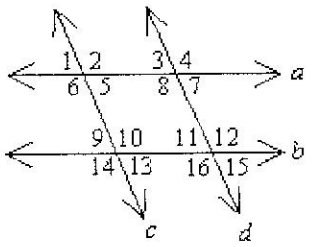
28. _____

29. _____

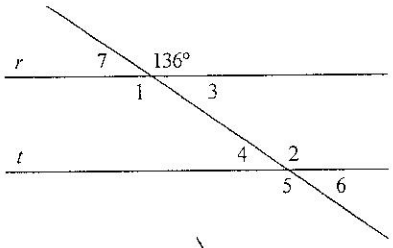
Chapter 3 Final Review

DO NOT WIRTE ON THIS PAPER!

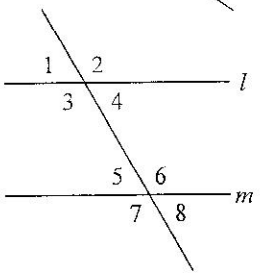
USE THE FIGURE AT THE RIGHT FOR PROBLEMS 1, 2, AND 3.



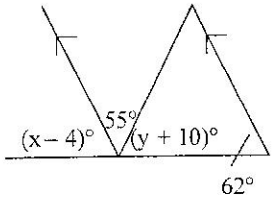
1. Which angles are corresponding angles?
2. Which angles are alternate interior angles?
3. Which angles are same side interior angles?
4. Write an equation in point-slope form of the line through point $J(5, -1)$ with slope 9.
5. Write an equation in point-slope form, $y - y_1 = m(x - x_1)$, of the line through points $(1, -5)$ and $(6, 10)$ Use $(1, -5)$ as the point (x_1, y_1).
6. Write an equation for the horizontal line that contains point $E(5, 1)$.
7. Write an equation in slope-intercept form of the line through point $P(-3, -6)$ with slope -4.
8. Write an equation for the line parallel to $y = 3x - 8$ that contains $P(2, 7)$.
9. Write an equation for the line perpendicular to $y = 7x + 2$ that contains $(8, 10)$.
10. Are the lines $y = -x - 6$ and $5x + 5y = 15$ perpendicular? Explain.
11. Graph $y = -x - 5$.
12. Graph $2x - 7y = -14$.
13. Line r is parallel to line t. Find the measure of each angle. The diagram is not to scale.



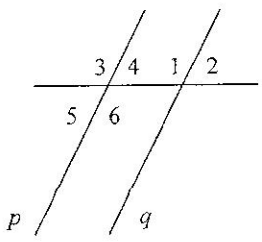
14. Find the value of the variable if $m \parallel l$, $m\angle 1 = 7x + 28$ and $m\angle 5 = 4x + 31$. The diagram is not to scale.



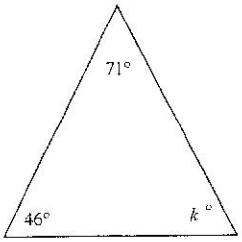
15. Find the values of x and y. The diagram is not to scale.



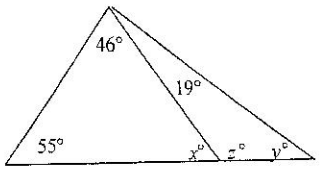
16. $m\angle 1 = 9x$ and $m\angle 3 = 108$. Find the value of x for p to be parallel to q. The diagram is not to scale.



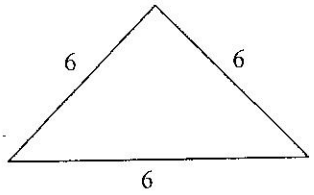
17. Find the value of k. The diagram is not to scale.



18. Find the values of x, y, and z. The diagram is not to scale.

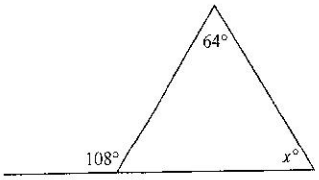


19. Classify the triangle by its sides. The diagram is not to scale.

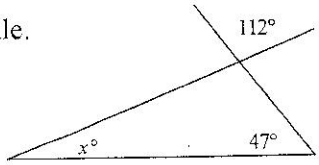


20. Classify $\triangle ABC$ by its angles and sides, when $m\angle A = 26$, $m\angle B = 87$, and $m\angle C = 67$.

21. Find the value of x. The diagram is not to scale.



22. Find the value of the variable. The diagram is not to scale.

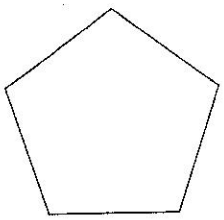


23. Classify the polygon by its sides.

24. Is the above polygon convex or concave?

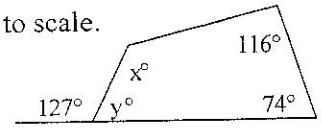
25. Find the sum of the measures of the interior angles of the figure.

26. Find the sum of the measures of the exterior angles of the figure.



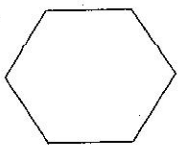
27. How many sides does a regular polygon have if each exterior angle measures 24?

28. Find the missing angle measures. The diagram is not to scale.



29. The sum of the measures of two exterior angles of a triangle is 254. What is the measure of the third exterior angle?

30. Find the measure of one interior and one exterior angle in the regular polygon.



Final Review Chapter Three Answer Sheet

Name:_____

1. _____

_____

2. _____

3. _____

4. _____

5. _____

6. _____

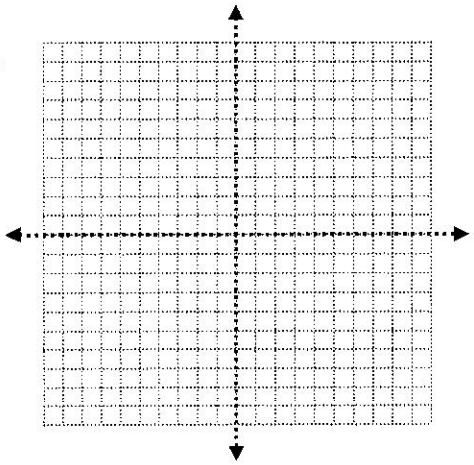
7. _____

8. _____

9. _____

10. _____ _____

11.



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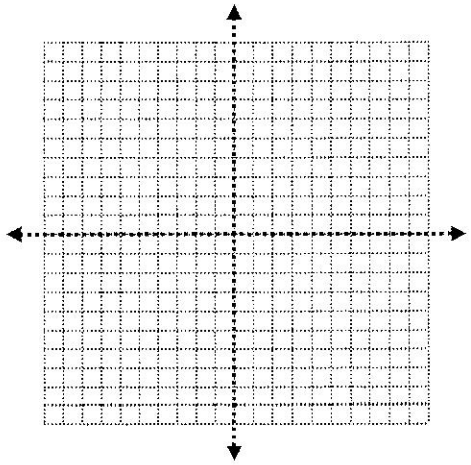

13. $m\angle 1$ _____ $m\angle 2$ _____ $m\angle 3$ _____ $m\angle 4$ _____

$m\angle 5$ _____ $m\angle 6$ _____ $m\angle 7$ _____

14. _____

15. x _____ y _____

16. _____

17. _____

18. x _____ y _____ z _____

19. _____

20. angles _____ sides _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. x _____ y _____

29. _____

30. interior _____ exterior _____

Chapter 12 Geometry Final Review

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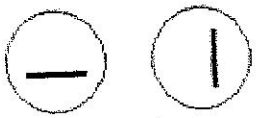
1. Which of the following transformations represents an isometry?

a.

preimage image

b.



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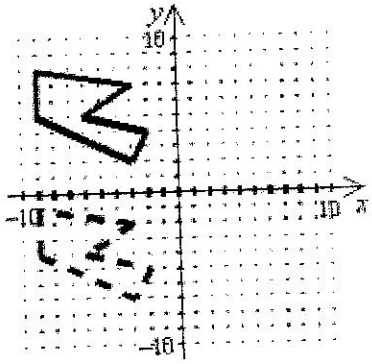
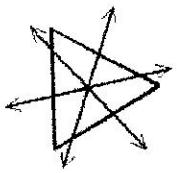
2. The change in position from the solid figure to the dotted figure is best described as a _____.



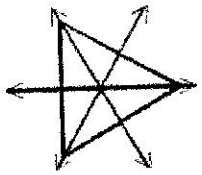
3. Which of the following letters (if drawn as simply as possible) has at least one line of symmetry? **Q, S, T, Z**

4. Which figure shows all lines of symmetry?

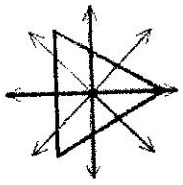
a.



b.



c.



5. Which figure has more than 1 line of symmetry?

a.

b.

c.

d.

Use the mapping notation to answer the next two questions: $CFED \rightarrow TSRQ$.

6. Name the image of $\angle E$.

7. Name the image of $\overline{DE}$.

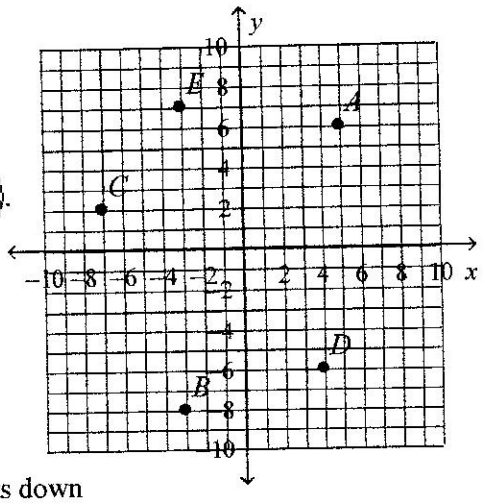
8. The vertices of a triangle are $P(-3, 8)$, $Q(-6, -4)$, and $R(1, 1)$. Name the vertices of the image reflected in the x-axis.

9. The vertices of a triangle are $P(-2, -4)$, $Q(2, -5)$, and $R(-1, -8)$. Name the vertices of the image reflected in the y-axis.

10. Describe in words the translation represented by the vector $\langle 2, -1 \rangle$.

11. Use an ordered pair to describe the translation that is 8 units to the right and 2 units up.

Use the diagram.



12. Find the vector that describes the translation $B \rightarrow C$.

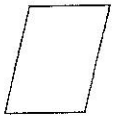
13. Find the image of C under the translation described by the vector $\langle 4, -10 \rangle$.

Use matrices to find the image of the figure under the translation.

14. ΔDEF with vertex matrix $\begin{bmatrix} -2 & 2 & 3 \\ 2 & 5 & 1 \end{bmatrix}$ translated 3 units left and 4 units down

15. Which letter has rotational symmetry?
    a. S b. D c. L d. U

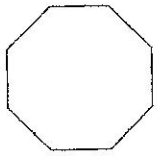
16. How many lines of symmetry does the figure have?



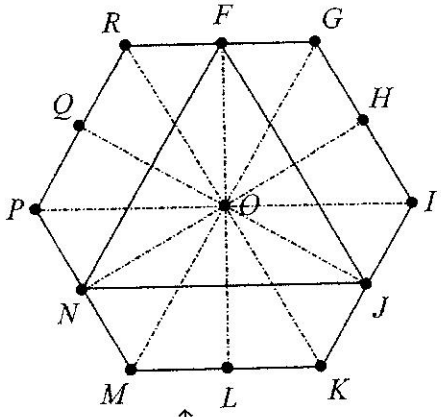
Use scalar multiplication to find the image vertices for a dilation with center (0, 0) and the given scale factor.

17. $\begin{matrix} x\text{-coordinate} \\ y\text{-coordinate} \end{matrix} \begin{bmatrix} -2 & 2 & 3 \\ -1 & -3 & 3 \end{bmatrix}$; scale factor 4

18. State whether the figure has rotational symmetry. If so, what is the angle of rotation?

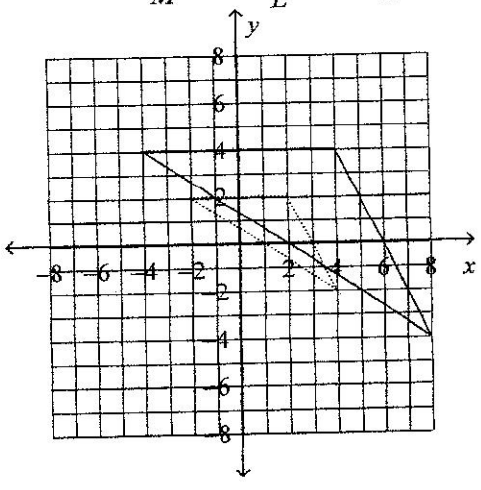


The hexagon *GIKMPR* and ΔFJN are regular. The dashed line segments form 30° angles.



19. Find the angle of rotation about O that maps Q to F.

20. Find the angle of rotation about O that maps $\overline{JK}$ to $\overline{FG}$.



21. The dashed triangle is a dilation image of the solid triangle. What is the scale factor?

22. Which type of isometry is the equivalent of two reflections across intersecting lines?

23. Find the glide reflection image of the point (3, -4) for the glide of $\langle -5, 7 \rangle$ and reflection line $x = -3$.

Final Review Chapter 12 Answer Sheet

Name: _____

1. a. YES or NO b. YES or NO 2. _____

3. _____ 4. _____ 5. _____

6. _____ 7. _____

8. P' = _____ 9. P' = _____

Q' = _____ Q' = _____

R' = _____ R' = _____

10. _____

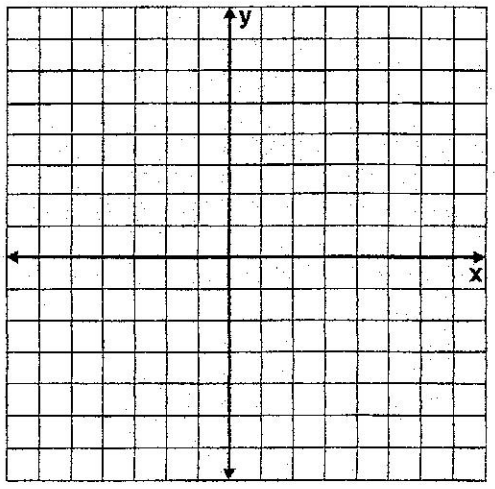
11. _____ 12. _____ 13. _____

14. $\begin{bmatrix} & \\ & \end{bmatrix}$ 15. _____ 16. _____

17. $\begin{bmatrix} & \\ & \\ & \end{bmatrix}$ 18. _____ 19. _____

20. _____ 21. _____ 22. _____

23. _____



Chapter 4 Final Review

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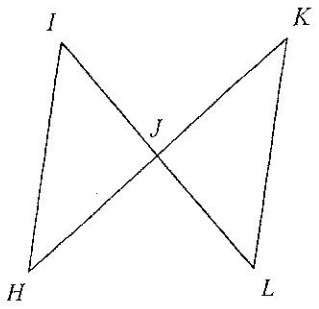
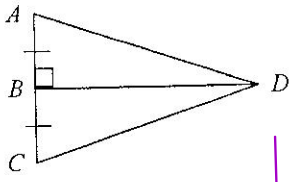
1. Supply the missing reasons to complete the proof.
Given: $\angle H \cong \angle K$ and $\overline{HJ} \cong \overline{KJ}$
Prove: $\overline{IJ} \cong \overline{LJ}$

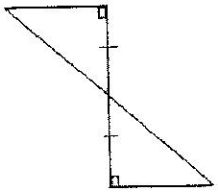


Statement	Reasons
1. $\angle H \cong \angle K$ and $\overline{HJ} \cong \overline{KJ}$	1.
2. $\angle IJH \cong \angle LJK$	2.
3. $\triangle IJH \cong \triangle LJK$	3.
4. $\overline{IJ} \cong \overline{LJ}$	4.



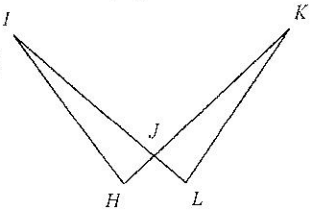
2. Name the theorem or postulate that lets you immediately conclude $\triangle ABD \cong \triangle CBD$.

3. Which postulate or theorem can you use to prove the triangles congruent?

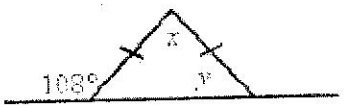


4. If $\triangle STU \cong \triangle KLM$, which of the following can you NOT conclude as being true?
a. $\overline{TU} \cong \overline{LM}$ b. $\overline{ST} \cong \overline{KM}$ c. $\angle T \cong \angle L$ d. $\angle S \cong \angle K$

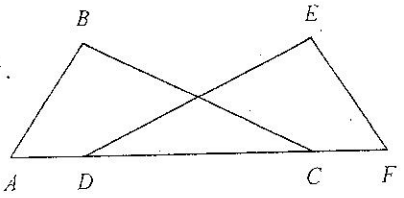
5. Based on the given information, what can you conclude, and why?
Given: $\angle H \cong \angle L$, $\overline{HJ} \cong \overline{JL}$



6. Find the values of x and y.



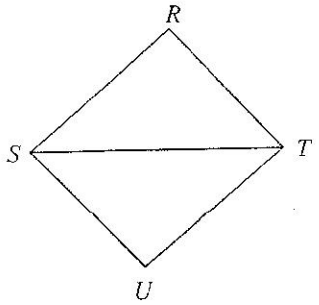
7. Find $m\angle DCB$, given $\angle A \cong \angle F$, $\angle B \cong \angle E$, and $m\angle CDE = 46°$.



8. Given $\triangle QRS \cong \triangle TUV$, $QS = 2v + 3$, and $TV = 5v - 9$, find the length of QS and TV.

9. What is the measure of the vertex angle of an isosceles triangle if one of its base angles measures 34°?

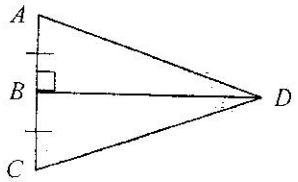
10. Complete the proof.
Given: $\overline{RS} \cong \overline{UT}$ and $\overline{RT} \cong \overline{US}$
Prove: $\triangle RST \cong \triangle UTS$



Proof:

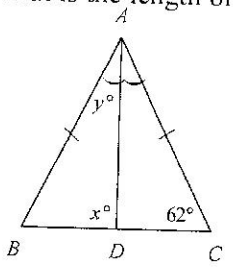
1. $\overline{RS} \cong \overline{UT}$	1. ?
2. $\overline{RT} \cong \overline{US}$	2. ?
3. $\overline{ST} \cong \overline{TS}$	3. ?
4. $\triangle RST \cong \triangle UTS$	4. ?

11. What other information do you need in order to prove the triangles congruent using the AAS Congruence Postulate?

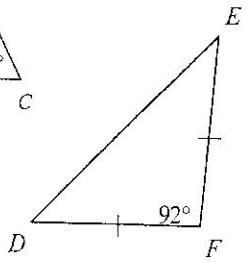


12. The sides of an isosceles triangle have lengths $x + 4$, $2x + 2$. The base has length $5x - 5$. What is the length of the base?

13. Find the values of x and y.

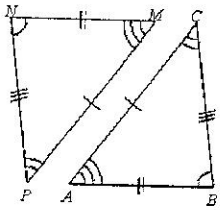


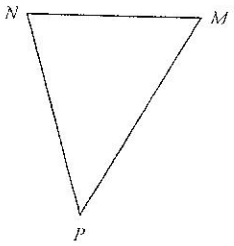
14. Use the information in the figure. Find $m\angle D$.



15. If $BCDE$ is congruent to $OPQR$, then $\overline{CD}$ is congruent to ___?___.

16. $\angle ACB \cong$ ___?___



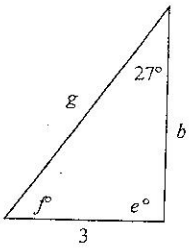


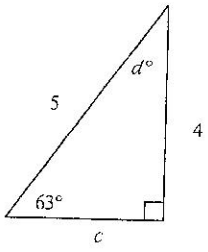
17. Name the angle included by the sides $\overline{NM}$ and $\overline{MP}$.

18. Name the side included between $\angle P$ and $\angle M$.

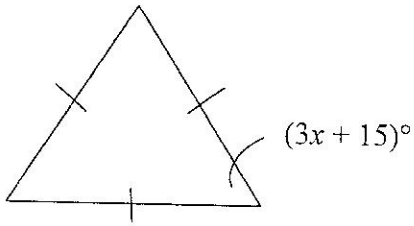
19. Given $\triangle ABC \cong \triangle PQR$, $m\angle B = 5v + 2$, and $m\angle Q = 8v - 7$, find $m\angle B$ and $m\angle Q$.

20. The two triangles are congruent as suggested by their appearance. Find the value of each variable. The diagrams are not to scale.

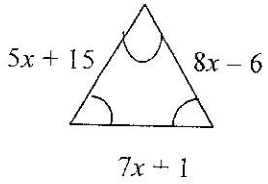




21. Find the value of x.



22. Find the value of x.



Final Review Chapter Four Answer Sheet

Name:_____

1. 1. _____

   2. _____

   3. _____

   4. _____

2. _____

3. _____

4. _____

5. _____ _____

6. x_____ y _____

7. _____

8. QS _____ TV _____

9. _____

10. 1. _____

    2. _____

    3. _____

    4. _____

11. _____

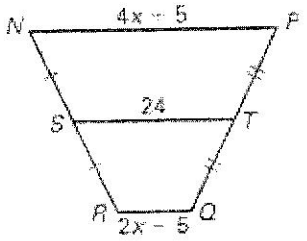
12. _____

Chapter 6 Final Review ***DO NOT WRITE ON THIS PAPER!***

1. Which description does NOT guarantee that a quadrilateral is a square?
   a. has all right angles and has all sides congruent
   b. is both a rectangle and a rhombus
   c. has all sides congruent and all angles congruent
   d. is a parallelogram with perpendicular diagonals

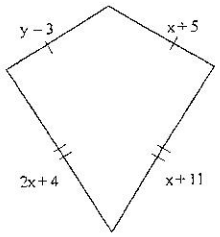
2. Which description does NOT guarantee that a quadrilateral is a kite?
   a. two distinct pairs of congruent adjacent sides
   b. one diagonal bisects opposite angles and the other diagonal does not
   c. perpendicular diagonals
   d. perpendicular diagonals, exactly one of which bisects the other

3. $NPQR$ is a trapezoid and $ST = 24$. Find the value of x.

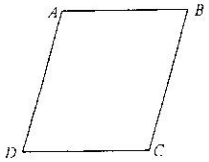


4. Which statement is true?
   a. All quadrilaterals are parallelograms.
   b. All parallelograms are quadrilaterals.
   c. All rectangles are squares.
   d. All quadrilaterals are squares.

5. Find the values of the variables and the lengths of the sides of this kite.

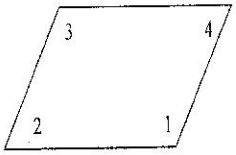


6. $ABCD$ is a parallelogram. If $m\angle CDA = 77$, then $m\angle DAB =$ __?__. The diagram is not to scale.

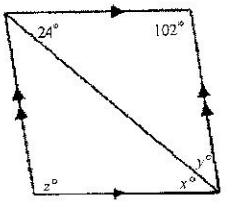


7. $LMNO$ is a parallelogram. If $NM = x + 20$ and $OL = 5x + 4$ find the value of x and then find NM and OL.

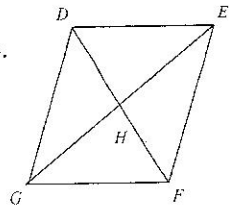
8. For the parallelogram, if $m\angle 2 = 3x - 26$ and $m\angle 4 = 2x - 8$, find $m\angle 1$. The diagram is not to scale.



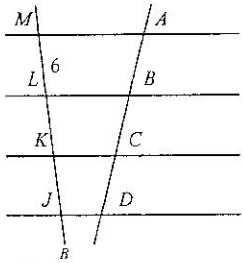
9. Find the values of the variables in the parallelogram. The diagram is not to scale.



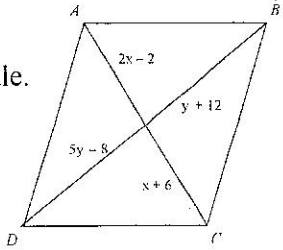
10. In parallelogram $DEFG$, $DH = x + 2$, $HF = 4y$, $GH = 4x - 1$, and $HE = 4y + 3$. Find the values of x and y. The diagram is not to scale.



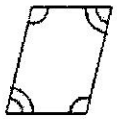
11. In the figure, the horizontal lines are parallel and $AB = BC = CD$. Find JM. The diagram is not to scale.



12. Find values of x and y for which $ABCD$ must be a parallelogram. The diagram is not to scale.



13. Based on the information in the diagram, can you prove that the figure is a parallelogram? Explain.



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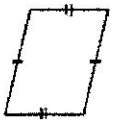

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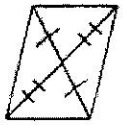
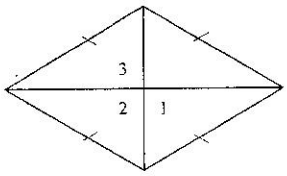
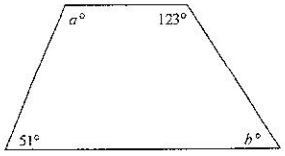


16. In the rhombus, $m\angle 1 = 15x$, $m\angle 2 = x + y$, and $m\angle 3 = 30z$. Find the value of each variable. The diagram is not to scale.

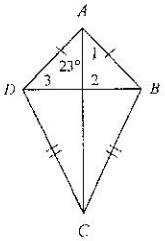


17. $DEFG$ is a rectangle. $DF = 2x - 6$ and $EG = x + 0$. Find the value of x and the length of each diagonal.

18. Find the values of a and b.The diagram is not to scale.

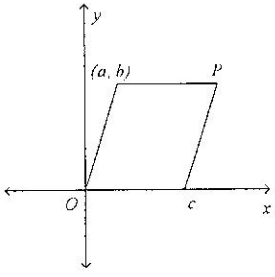


19. Find $m\angle 1$ and $m\angle 3$ in the kite. The diagram is not to scale.



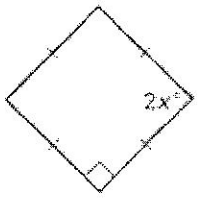
20. $\angle J$ and $\angle M$ are base angles of isosceles trapezoid $JKLM$. If $m\angle J = 20x + 9$, and $m\angle M = 14x + 15$, find $m\angle K$.

21. For the parallelogram, find coordinates for P without using any new variables.



22. In the coordinate plane, three vertices of rectangle $PQRS$ are $P(0, 0)$, $Q(0, b)$, and $S(c, 0)$. What are the coordinates of point R?

23. Find the value of x.



Final Review Chapter Six Answer Sheet

Name:_____

1. _____ **2.** _____

3. _____ **4.** _____

5. x _____ y _____ short sides _____ long sides _____

6. _____ **7.** x _____ NM _____ OL _____

8. _____ **9.** $x°$ _____ $y°$ _____ $z°$ _____

10. x _____ y _____ **11.** _____

12. x _____ y _____

13. _____ _____

14. _____ _____

15. _____ _____

16. x _____ y _____ z _____

17. x _____ DF _____ EG _____

18. $a°$ _____ $b°$ _____ **19.** $m\angle 1$ _____ $m\angle 3$ _____

20. _____ **21.** _____

22. _____ **23.** _____