RightStart™ Mathematics
Corrections and Updates for
Level G/Grade 6 Lessons and Worksheets, second edition

LESSON/WORKSHEET/SOLUTIONS		CHANGE DATE	CORRECTION OR UPDATE
Lesson 9		10/09/2018	Hexagram is a special six-point star based on a hexagon.
Worksheet 10-3 Solutions 10-3		10/09/2018	Hexagram's definition is a closed six-point figure.
Worksheet 15		10/10/2018	Measurements for the rectangles are off. See attached PDF.
Worksheet 27-1		11/20/2018	Lengths for the lines to measure for Questions 6-10 are off slightly. See attached PDF.
Worksheet 28		11/20/2018	Measurements of the rectangle and centimeter lines are off slightly. See attached PDF.
Worksheet 33-2 Solutions 33-2		01/03/2019	Question 14 answer is Worksheet 32, not Worksheet 31. Question 15 has been added. See attached PDF.
Lesson 35		01/03/2019	The wording for the paragraph under Worksheet 35-1 has changed. It now reads, "This worksheet will have you measuring in hundredths. Your ruler only has markings for tenths, so you will be estimating the hundredths measurement. Use your best judgement to make your estimate. Complete the worksheet now."
Worksheet 35-1		11/20/2018	Question 4 gives the wrong width measurement. It should be 2.493, not 2.927. See attached PDF.
Solutions 35-1		01/03/2019	The second calculation in Problem 1 should be $A = 2 \times 1 = 2$ in^2, not $A = 3 \times 1 = 3$ in^2.
Lesson 37		01/03/2019	The list of materials needs to include the Casio Calculator fx-300MS.
Lesson 38		11/19/2018	In the first paragraph and the second to last paragrah, the worksheet referenced should be Worksheet 36, not 34 and 35.
Worksheet 39-1 Solutions 39-1		03/27/2019	Changed some of the matching terms and Questions 10 and 11. See attached PDFs.
Solutions 39-3		01/03/2019	Question 25 measurements should be 38 mm, not 39, and 48 mm, not 49. Area calculates to 1824 mm^2, not 1911 mm^2.
Solutions 39-4		01/03/2019	Question 31-33 measurement should be 74 mm, not 73. Area calculates to 4921 mm^2, not 4854.5 mm^2.
Solutions 41-3		01/03/2019	Question 32 measurements should be 52 mm, not 53, 33 mm, not 32, and 29 mm, not 28. Perimeter calculates to 230 mm, not 229 mm. Question 34 measurements should be 2.0 in., not 2.1. Perimeter calculates to 7.3 cm, not 7.4 cm.
Worksheet 50-2 Solutions 50-2		01/03/2019	An additional question has been added. See attached PDFs.

Worksheet 53-1		01/03/2019	Changed the second definition listed to "quadrilateral with one and only one set of parallel lines", not "parallelogram with one and only one set of parallel lines. See attached PDF.
	Solutions 53-1	01/03/2019	Problem 10 measurement should be 2.4 in., not 2.5. Perimeter calculates to 6.1 in, not 6.2 in and 15.5 cm, not 15.7 cm.
	Solutions 53-2	01/03/2019	Problem 20 measurement should be 6.8 cm, not 6.9. Area calculates to 39.1 cm^2, not 39.6 cm^2.
Lesson 55		01/03/2019	The game for the day should use a target number of 180.
	Solutions 62	01/22/2019	Question 5 answer should read 3 mm, not 3 cm.
	Solutions 76-2	02/28/2019	Question 21 answer should read 122º, not 58º.
Worksheet 76-3	Solutions 76-3	03/16/2019	Question 32 should read "If line segments *GN* + *NA* = 25 mm, what is line segments *TN* + *NI*?" Answer is 50 mm. There were a few incorrect and/or illogical variations of this question and answer.
Worksheet 87-1	Solutions 87-1	03/27/2019	Order of the matching terms has been changed. The circles used for Questions 11 and 12 were off and have been corrected. See attached PDF.
Worksheet 90-2	Solutions 90-2	06/03/2019	Question 9 uses the information from Problem 7, not Problem 6.
Worksheet 103-1	Solutions 103-1	04/10/2019	The third definition should read "formula for the perimeter of a rectange" not "formula for the perimeter of a parallellogram".
Worksheet 103-2	Solutions 103-2	06/03/2019	The prices Problems 16 have been changed to MN 20 cm = $12.95, MN 25 cm = $13.55, ND 20 cm $12.53, and ND 25 cm $12.95. See attached PDFs.
Lesson 120		10/10/2018	Under the Pool table game heading, second paragraph, the second sentence should read, "In the second and third figures, the ball is reflected at 30º, then at 60º."
	Solutions 121-2	06/03/2019	The answer for Question 20 Elipse is ∞ for maximum number of lines of symmetry, not 2.
	Solutions 126-6	06/03/2019	The answer for Question 67 should be 19 mm, not 21 mm.
	Solutions 126-8	01/22/2019	The graphic for Question 78 has an error in the top right drawing. It should be as shown here.
	Solutions 127-2	06/03/2019	Question 23, identification of a rhombus, should be *ABJF* and *CDEJ*. The polygons *FKLE* and *KBCL* are not rhombuses because the four sides are not equal.

1. All these rectangles have the same area of 24 cm². Use a ruler to find the measurements of the sides.

2. Use a perimeter formula and your calculator to calculate the perimeters in cm. Show your work. Use each of the three formulas at least once.
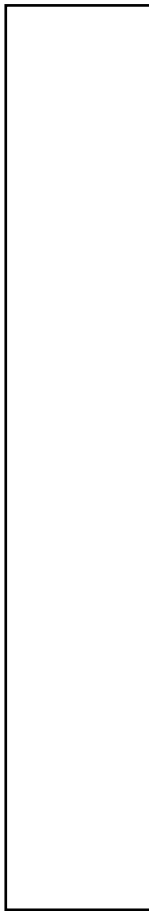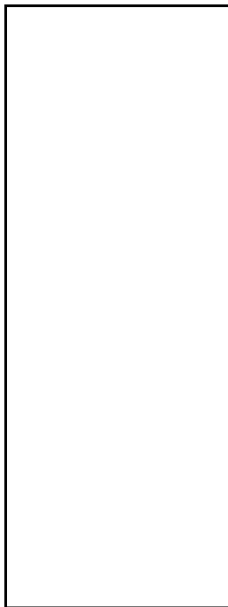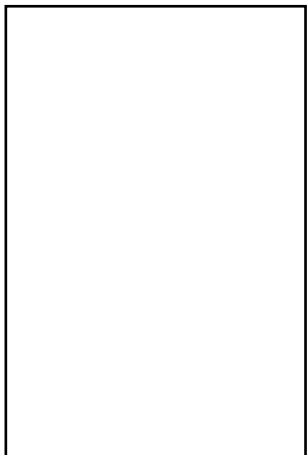
3. Finding all the possible measurements of the rectangles should have reminded you of finding factors. List all the factors of 24.

_____

4. What pattern do you see in the perimeters as the rectangles become closer to a square?

_____

_____

5. What is a formula for the perimeter of a square ($h = w$)?

_____

Name: _____
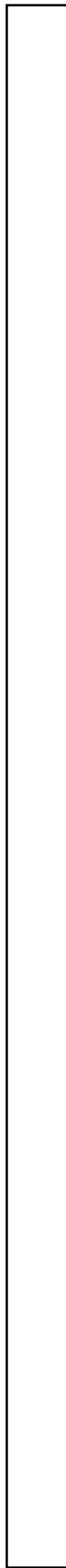
Date: _____

1–4. Match the following terms with the correct definitions.

Crosshatch   the number of parts in a fraction

Numerator   shading used by engineers and designers to represent area

Denominator   the number in a fraction naming the size of the part

Unit fraction   fractions with a numerator of 1

5. Create a ruler below dividing it into sixteenths. Using your drawing tools, bisect the horizontal line below. At that point draw a vertical line the height of line *m*. Then bisect the two halves; draw lines the height of line *a*. Continue by bisecting the four fourths; draw lines the height of line *t*. Finally, bisect the eight eighths and draw those lines the height of line *h*.

m   *a*   *t*   *h*   0   1

Write the fraction for each line. Use your drawing tools to determine the length.

6. _____   _____

7. _____   _____

8. _____   _____

9. _____   _____

10. _____   _____

11–12. Using your drawing tools, draw a horizontal line the length indicated by the fraction. Use the ruler above as your guide.
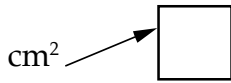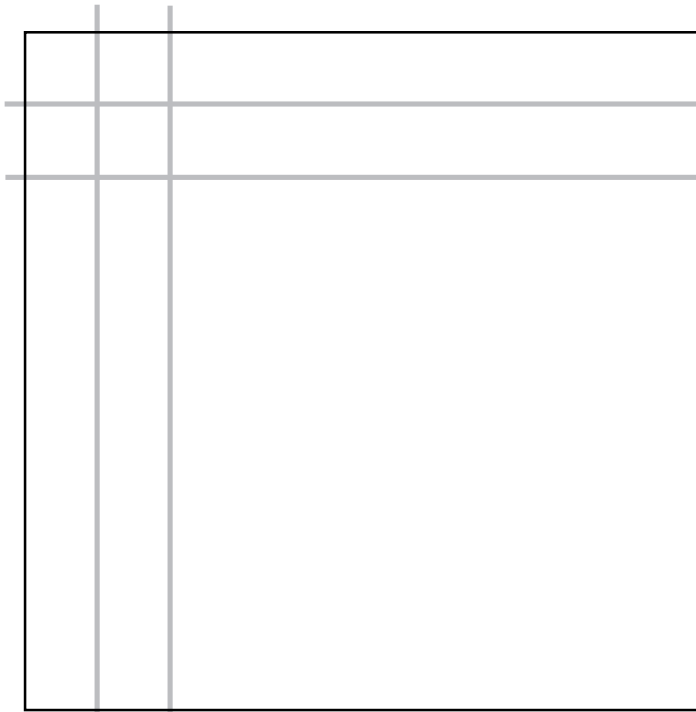
$\dfrac{5}{8}$ ×
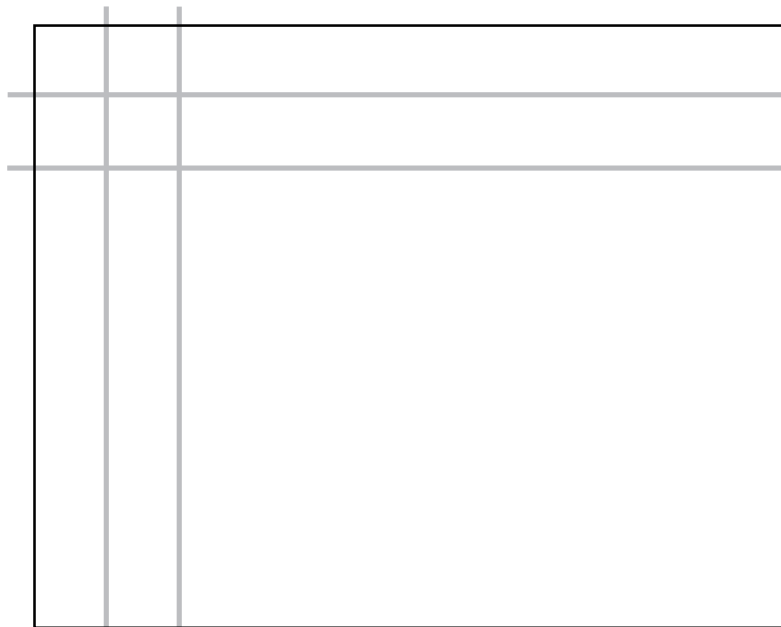
$\dfrac{5}{16}$ ×

Name: _____

Date: _____

1. Before starting, guess which rectangle has the greater area. _____

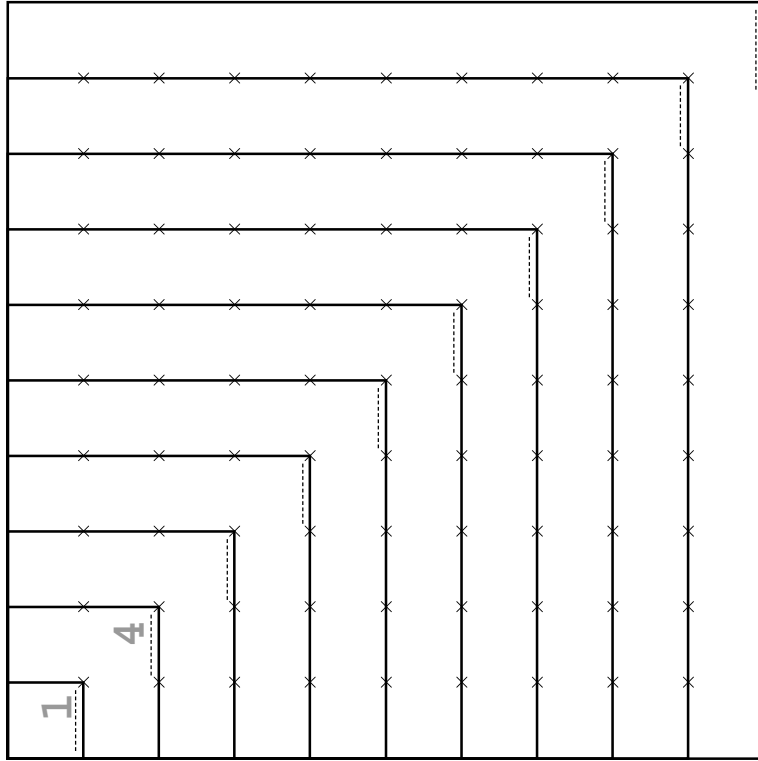2. Fill the two rectangles below by drawing square centimeters.

cm²

A.

B.

3. Which of the two rectangles, A or B, has the greater area? Explain you reasoning below.

_____

_____

_____

Date: _____

8. Below is a shortened version of the multiplication table. Find the area of each square and write the number on the dotted line.

1
4

9. What is special about the numbers? _____

10. Does the results from the previous worksheet apply? _____

11. Find the difference between each two consecutive numbers that you wrote in the multiplication table above.

3, 5,

12. Below is another version of the multiplication table. Fill in the shaded squares and circles.

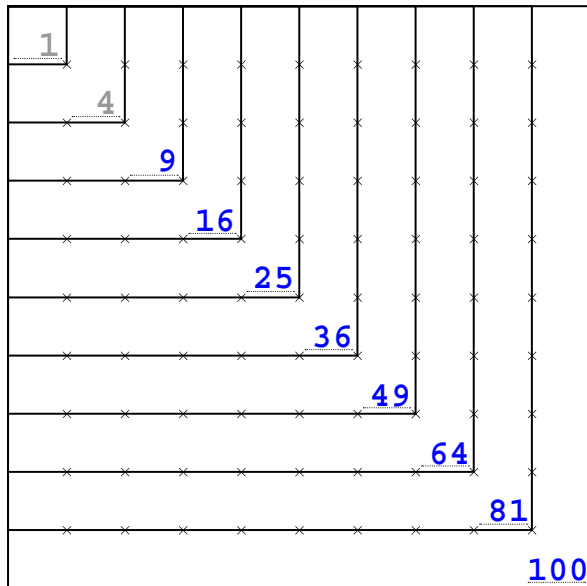|	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

13. See the two numbers in circles next to a square. How are they related to the number in the square? _____

14. On what worksheet did you work with that relationship? _____

15. What is the formula? _____

8. Below is a shortened version of the multiplication table. Find the area of each square and write the number on the dotted line.

```
1
  4
    9
      16
        25
          36
            49
              64
                81
                  100
```

9. What is special about the numbers? **They are**

squares.

10. Does the results from the previous worksheet apply? **yes**

11. Find the difference between each two consecutive numbers that you wrote in the multiplication table above.

3, 5, 7, 9, 11, 13, 15, 17, 19

12. Below is another version of the multiplication table. Fill in the shaded squares and circles.

1	2	3	4	5	6	7	8	9	10
2	4		8						
3		9		15					
4	8		16		24				
5		15		25		35			
6			24		36		48		
7				35		49		63	
8					48		64		80
9						63		81	
10							80		100

13. See the two numbers in circles next to a square. How are they related to the number in the square?

Equal & one less than the square.

14. On what worksheet did you work with that relationship?

32

15. What is the formula? $(n+1) \times (n-1) = n^2 - 1$

NOTES: Math is all about patterns. Being aware and able to find patterns will greatly help the student in their math education.

DICTIONARY TERMS: consecutive

Name: _____

Date: _____

Use these two quadrilaterals for the next four problems. Pay attention to the precision requested with the measurements.
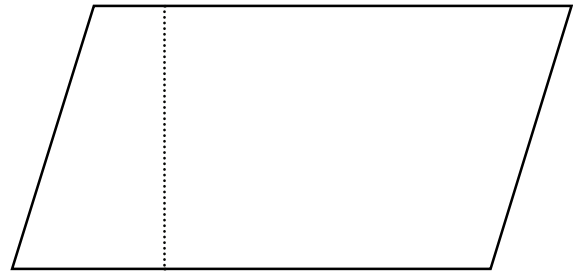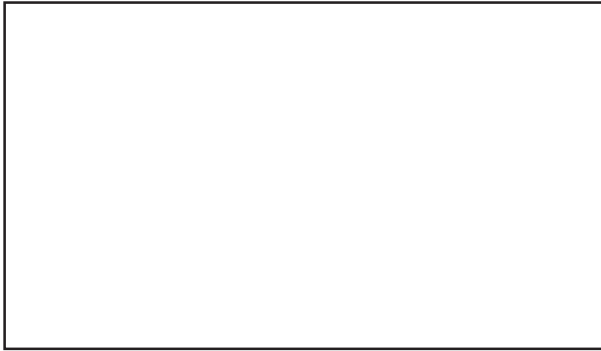
1. Calculate the area of both quadrilaterals. **Measure to the nearest whole number** using inches.

2. Calculate the area of both quadrilaterals. **Measure to the tenths** using inches. Round the answers to the tenths.

3. Calculate the area of both quadrilaterals. **Measure to the hundredths** using inches. Round the answers to the hundredths.

4. Calculate the area of both quadrilaterals. The rectangle measures 3.139 inches wide and 1.817 inches tall. The parallelogram measures 2.493 inches wide and 1.383 inches tall. Round the answers to the thousandths.

CONTINUE READING THE LESSON.

Date: _____

1–7. Match the following terms with the correct definitions.

Formula   a general principle stated in mathematical symbols

Square inch   the number of units it takes to cover a surface

                                             a square measuring one inch by one inch used to calculate area
Altitude

                                             the line measured to give the height of a figure
Area

                                             a square measuring one centimeter by one centimeter used to
Square millimeter   calculate area

                                             a square measuring one millimeter by one millimeter used to
Square centimeter   calculate area

8. What is the symbol for square centimeters? _____

9. What is the symbol for square inches? _____

10. What is the formula for calculating area of a rectangle? _____

11. What is the formula for calculating perimeter of a rectangle? _____

12. What is the area for the shape below? Show your work below.
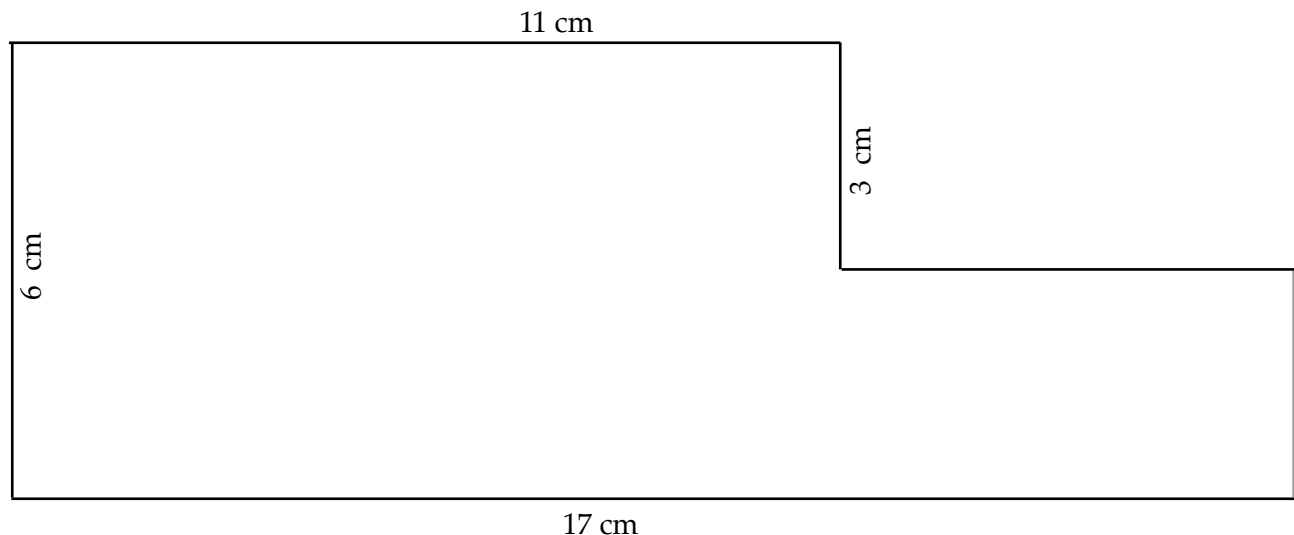
11 cm

3 cm

6 cm

17 cm

1-7. Match the following terms with the correct definitions

Formula — a general principle stated in mathematical symbols

Square inch — the number of units it takes to cover a surface

Altitude — a square measuring one inch by one inch used to calculate area

Area — the line measured to give the height of a figure

Square millimeter — a square measuring one centimeter by one centimeter used to calculate area

Square centimeter — a square measuring one millimeter by one millimeter used to calculate area

8. What is the symbol for square centimeters? __cm²__

9. What is the symbol for square inches? __in²__

10. What is the formula for calculating area of a rectangle?   __A = w × h or A = wh__

11. What is the formula for calculating perimeter of a rectangle?   __P = 2 (w + h) or__
__P = 2w + 2h or__
__P = w + h + w + h__

12. What is the area for the shape below? Show your work below.

6 cm

17 cm

11 cm

3 cm

6 cm

3 cm
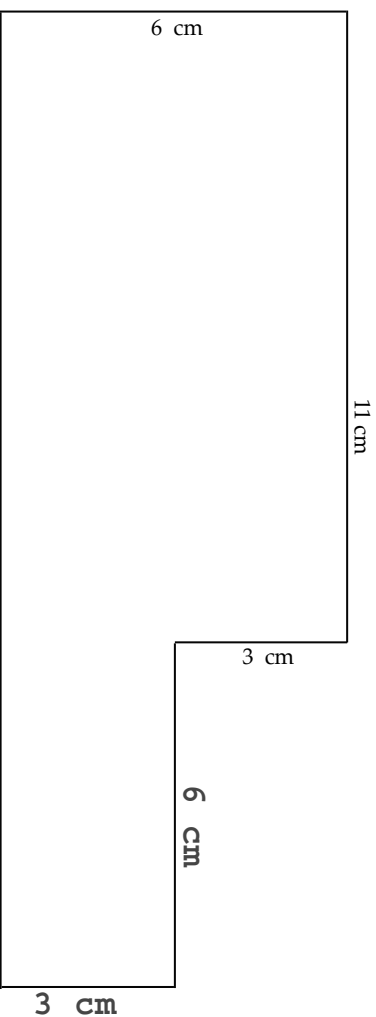
A = 84 cm²

[CALCULATION METHODS WILL VARY.]

NOTES: Problem 12 can be solved a number of different ways. If the shape is divided vertically into two rectangles, one 11 cm by 6 cm and the other 6 cm by 3 cm, the calculation will look like this:

A = *wh* (left rectangle) + *wh* (right rectangle)
A = 11 × 6 + 6 × 3
A = 66 + 18
A = 84 cm²

If the shape is divided horizontally into two rectangles, one 11 cm by 3 ft cm the other 17 cm by 3 cm, the calculation will look like this:

A = *wh* (upper rectangle) + *wh* (lower rectangle)
A = 11 × 3 + 17 × 3
A = 33 + 51
A = 84 cm²

Or, if the shape is made into a whole rectangle, then subtract the added rectangle, the calculation will look like this:

A = *wh* (whole rectangle) – *wh* (added rectangle)
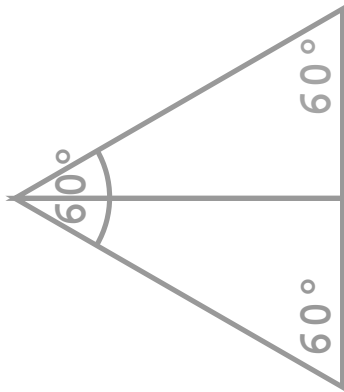A = 17 × 6 – 6 × 3
A = 102 – 18
A = 84 cm²

Name: _____

Date: _____

Use the two paper 30-60 triangles and arrange them to make the following figures. Then draw them with your drawing tools below. Make the shortest side of the 30-60 triangles 2.5 cm or 1 inch. For each figure, measure and write the angle of the vertices.

1. Equilateral triangle.

2. Isosceles triangle that is not equilateral.

3. Rectangle.

6. Quadrilateral that is not a parallelogram.

4-5. Two parallelograms that are neither rectangles nor mirror images of each other.

7. Which figure has the greatest area? _____

8. Which figures have the least perimeter? _____

9. Which figures have the greatest perimeter? _____

Use the two paper 30-60 triangles and arrange them to make the following figures. Then draw them with your drawing tools below. Make the shortest side of the 30-60 triangles 2.5 cm or 1 inch. For each figure, measure and write the angle of the vertices.

1. Equilateral triangle.
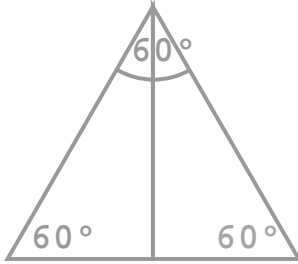
2. Isosceles triangle that is not equilateral.
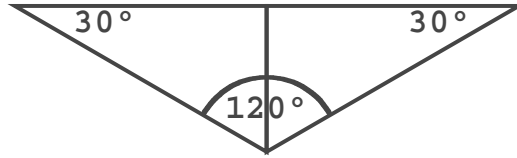
3. Rectangle.

4–5. Two parallelograms that are neither rectangles nor mirror images of each other.
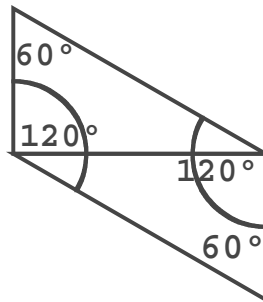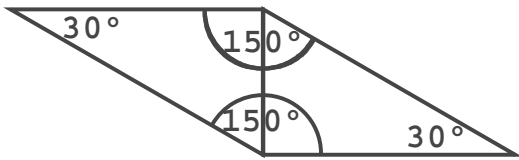
6. Quadrilateral that is not a parallelogram.
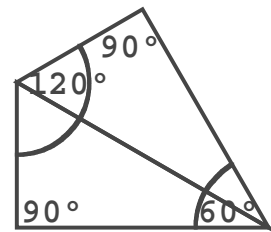
[ORIENTATION WILL VARY.]

7. Which figure has the greatest area? **all the same**

8. Which figures have the least perimeter? **rectangle, quadrilateral**

9. Which figures have the greatest perimeter? **isosceles triangle, parallelogram with shortest sides of the triangle touching**

NOTES: Some students may struggle creating the figures with their paper triangles. Help them realize that they can flip their triangles over as well as rotate the triangles. Once the figure is discovered with the paper triangles, drawing it is made easier.

Check that the shortest side of each 30-60 triangle drawn is 2.5 cm or 1 inch. One student, Draeke, chose to write "2.5 cm" on his paper triangles to help with the construction of the figures on the worksheet.

DICTIONARY TERMS: goniometer

Date: _____

1–8. Match the following words with the correct definitions.

Straightedge   shape with four sides

Octagon   quadrilateral with one and only one set of parallel lines

Trapezoid   eight sided polygon

Quadrilateral   tool for drawing a straight line

Hexagon   polygon with six sides

Distributive Property   quadrilateral with two sets of parallel lines

Parallelogram   two equal sides

Isosceles   when multiplying or dividing some numbers all by the same
                                                 number, you can add the numbers first and multiply the total

9. How many centimeters are in 1 inch? _____

10. Find the perimeter of the triangle below to the nearest tenth of an inch.
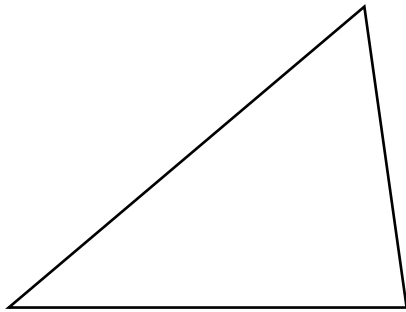
11. Calculate the perimeter of the same triangle in centimeters using the calculator. $P =$ _____

Use letters to identify the following shapes.
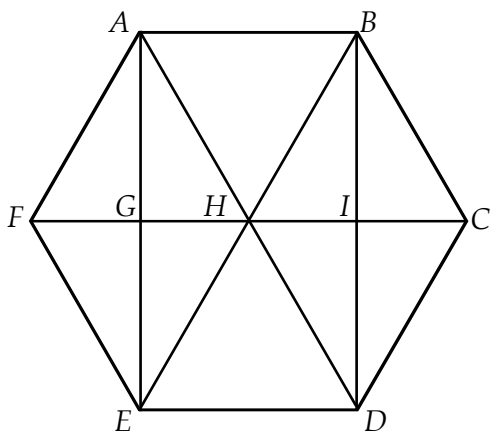
12. Two rhombuses: _____

13. Three rectangles: _____

14. Four trapezoids: _____

15. Six equilateral triangles: _____
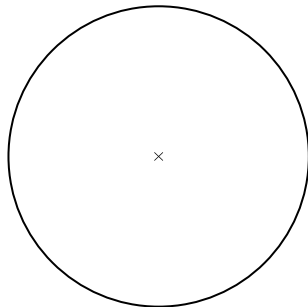
_____

16. Four isosceles triangles: _____

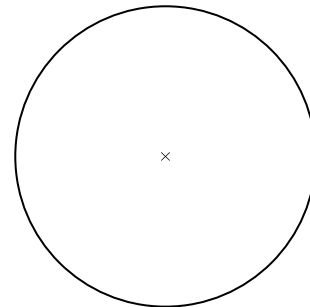17. Twelve right triangles: _____

Date: _____

1–10. Match the following terms with the correct definitions

Circumference	when one circle is inside the other and they are tangent at the same point
Inscribed polygon	the distance around a circle
Tangent	when all of the vertices of a polygon lie on a circle
Internally tangent circles	the exact point where a line segment touches a circle
Line	a line measuring across the middle of a circle
Diameter	the ratio of the circumference to the diameter of a circle
Pi	a polygon drawn around a circle when each of its sides is drawn tangent to a circle
Circumscribed polygon	a path made by points that extends forever
Radius	an exact place, with no width, depth or height
Point	a line segment with one end at the center and the other on the circle

11. Using your drawing tools, draw an 8 sided inscribed regular polygon.

12. Using your drawing tools, draw an 8 sided circumscribed regular polygon.

13–14. For each polygon, measure the length of a side in millimeters. Find the perimeter. Calculate the ratio of P, the perimeter of the polygon, to D, the diameter of the circle. Complete the chart below.
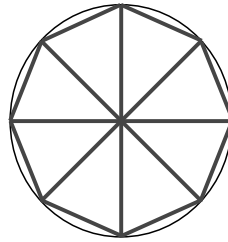
Number of Sides	Length, Side of Polygon in mm	P (perimeter) of Polygon in mm	D (diameter) of Circle in mm	Ratio of P to D (hundredths)
8 Inscribed				
8 Circumscribed				

NOTES: On Problems 13 and 14, if needed remind the student that the ratio of *P*, perimeter, to *D*, diameter, is found by dividing the perimeter by the diameter, 120 ÷ 40 and 128 ÷ 40. If the student's measurements vary, check that their ratio is accurate.

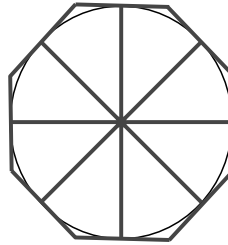If the student uses tickmarks, rather than line segments as shown in Problems 11 and 12, that is acceptable.

1–10. Match the following terms with the correct definitions

Circumference — when one circle is inside the other and they are tangent at the same point

Inscribed polygon — the distance around a circle

Tangent — when all of the vertices of a polygon lie on a circle

Internally tangent circles — the exact point where a line segment touches a circle

Line — a line measuring across the middle of a circle

Diameter — the ratio of the circumference to the diameter of a circle

Pi — a polygon drawn around a circle when each of its sides is drawn tangent to a circle

Circumscribed polygon — a path made by points that extends forever

Radius — an exact place, with no width, depth or height

Point — a line segment with one end at the center and the other on the circle

11. Using your drawing tools, draw an 8 sided inscribed regular polygon.

12. Using your drawing tools, draw an 8 sided circumscribed regular polygon.

13–14. For each polygon, measure the length of a side in millimeters. Find the perimeter. Calculate the ratio of P, the perimeter of the polygon, to D, the diameter of the circle. Complete the chart below.

| Number of Sides	Length, Side of Polygon in mm	P (perimeter) of Polygon in mm	D (diameter) of Circle in mm	Ratio of *P* to *D* (hundredths)
8 Inscribed	15 mm	120 mm	40 mm	3.00
8 Circumscribed	16 mm	128 mm	40 mm	3.20

Name: _____

Date: _____

12. Draw a special square using the radius of this circle as one side. Find the perimeter and area of the square and then find the circumference and area of the circle.
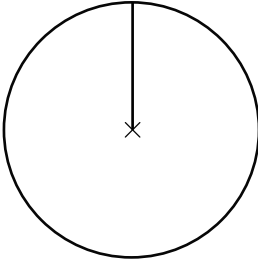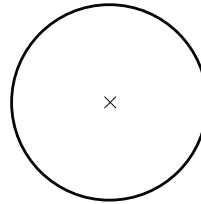
13. Find the radius of a circle that has twice the circumference of the circle below. Draw the circle.
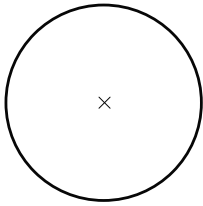
14. Find the radius of a circle that has twice the area of the circle below. Draw the circle.

15. The Vikings had a favorite snack called lefsa. It is a soft tortilla made with potatoes, flour, butter, and cream. Find the area to the nearest tenth of a square cm for each size of lefsa in Minnesota and North Dakota. Fill in the chart.

16. Find the price per square centimeter in tenths of a cent for each piece of lefsa.

Lefsa in Minnesota		
Size	20 cm	25 cm
Price	$12.95	$13.55
Area		
Price/cm²		

Lefsa in North Dakota		
Size	20 cm	25 cm
Price	$12.53	$12.95
Area		
Price/cm²		

12. Draw a special square using the radius of this circle as one side. Find the perimeter and area of the square and then find the circumference and area of the circle.

1.7 cm
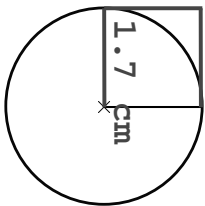
$$P = 1.7 \times 4$$
$$P = 6.8 \text{ cm}$$

$$C = 2\pi r$$
$$C = 2\pi \times 1.7$$
$$C = 10.7 \text{ cm}$$

$$A(sq) = r^2$$
$$A(sq) = 1.7^2$$
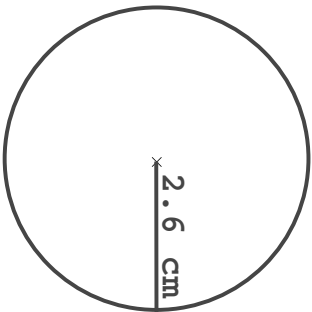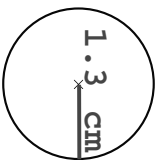$$A(sq) = 2.9 \text{ cm}^2$$

$$A(cir) = \pi r^2$$
$$A(cir) = \pi \times 1.7^2$$
$$A(cir) = 9.1 \text{ cm}^2$$

13. Find the radius of a circle that has twice the circumference of the circle below. Draw the circle.

1.3 cm

2.6 cm

$$C(sm) = 2\pi r$$
$$C(sm) = 2\pi \times 1.3$$
$$C(sm) = 8.2 \text{ cm}$$
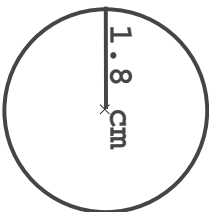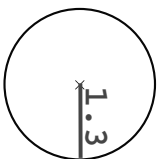$$C(lg) = 8.2 \times 2$$
$$C(lg) = 16.4 \text{ cm}$$
$$16.4 = 2\pi r$$
$$r(lg) = \frac{16.4}{2\pi} = 2.6 \text{ cm}$$

14. Find the radius of a circle that has twice the area of the circle below. Draw the circle.

1.3 cm

1.8 cm

$$A(sm) = \pi r^2$$
$$A(sm) = \pi \times 1.3^2$$
$$A(sm) = 5.3 \text{ cm}^2$$
$$A(lg) = 5.3 \times 2$$
$$A(lg) = 10.6$$
$$10.6 = \pi r^2$$
$$\frac{10.6}{\pi} = r^2 = 3.37$$
$$r(lg) = 1.8 \text{ cm}$$

15. The Vikings had a favorite snack called lefsa. It is a soft tortilla made with potatoes, flour, butter, and cream. Find the area to the nearest tenth of a square cm for each size of lefsa in Minnesota and North Dakota. Fill in the chart.

16. Find the price per square centimeter in tenths of a cent for each piece of lefsa.

Lefsa in Minnesota		
Size	20 cm	25 cm
Price	$12.95	$13.55
Area	314.2	490.9
Price/cm²	4.1¢	2.8¢

Lefsa in North Dakota		
Size	20 cm	25 cm
Price	$12.53	$12.95
Area	314.2	490.9
Price/cm²	4.0¢	2.6¢

NOTES: On Question 16, the sizes given, 20 cm and 25 cm, is the diameter. Although it does not specifically say it is the diameter of the snack, using a radius measurement is not practical nor likely.