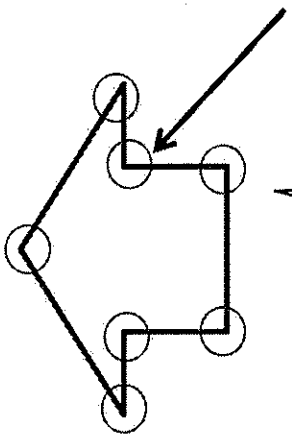
Homework Helpers

Grade 2 Module 8

G2-M8-Lesson 1

1. Identify the number of sides and angles for the shape. Circle the angles.

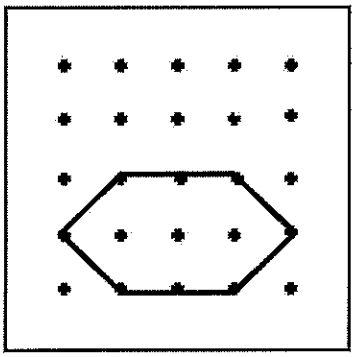


The sides are straight lines. The sides are easy to count on this shape. 1 side, 2 sides, ..., 7 sides.

The angles are corners where two sides meet. I have to count the angles that point in, too, and not just the angles that point out. 1 angle, 2 angles, ...,7 angles.

This shape has 7 sides and 7 angles!

2. Ethan says that this shape has 6 sides and 6 angles. Frankie says that it has 8 sides and 8 angles. Who is correct? How do you know?



I know that Ethan is correct because I can count 6 sides. I see 3 sides on the top and 3 sides on the bottom. Then I count the angles. I see 3 angles on the left and 3 angles on the right. That means there are 6 sides and 6 angles.

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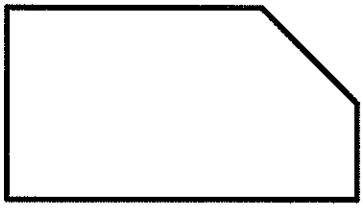
G2-M8-Lesson 2

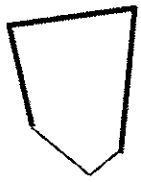
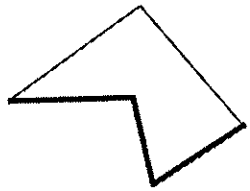
1. Count the number of sides and angles to identify the polygon.



This polygon has 5 sides and 5 angles. That makes it a pentagon!

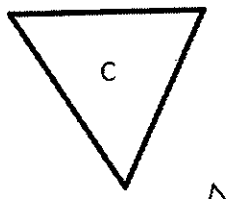
pentagon

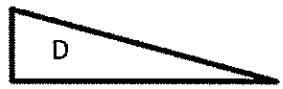
2. Draw more sides to complete 2 examples of the polygon.

	Example 1	Example 2
Pentagon For each example, 3 lines were added. A pentagon has 5 total sides.		

3. Explain why both polygons C and D are triangles.

Both polygons have 3 sides and 3 angles.





Even though they look different, they are both triangles since they have 3 sides and 3 angles.

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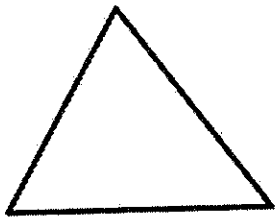
G2-M8-Lesson 3

1. Use a straightedge to draw the polygon with the given attributes.

   Draw a polygon with 3 angles.

   Number of sides: 3

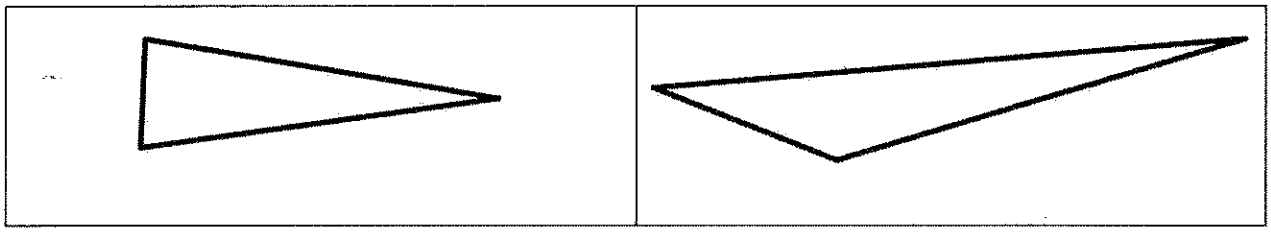
   Name of polygon: *triangle*



When I draw a polygon with 3 angles, it also has 3 sides. That is a triangle!

2. Use your straightedge to draw 2 new examples of the polygon you drew for Problem 1.

   Triangle



All triangles must have 3 sides and 3 angles. By changing the size of the angles and the length of the sides, I can make all kinds of different triangles! This one is long and skinny!

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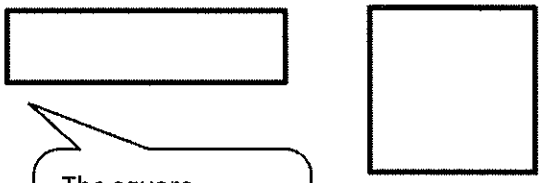
G2-M8-Lesson 4

1. Use your ruler to draw 2 parallel lines that are not the same length.

I know that parallel lines go in the same direction and never touch. I can draw parallel lines by placing my ruler on the paper and using both sides to draw 2 straight lines.

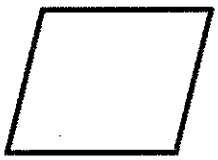
2. Draw a quadrilateral with 4 square corners.



The square corners are in the shape of an L.

Both of these quadrilaterals have 4 square corners. That means both shapes are rectangles. The one on the right is a special rectangle called a square! It has 4 square corners *and* 4 sides that are the same length!

3. Draw a quadrilateral with two sets of parallel sides.



I know this is a quadrilateral because it has 4 sides and 4 angles. It has no square corners, so it can't be a rectangle. It does have 2 sets of parallel sides; it must be a parallelogram!

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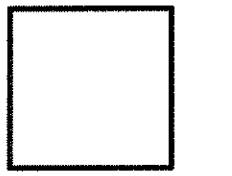
G2-M8-Lesson 5

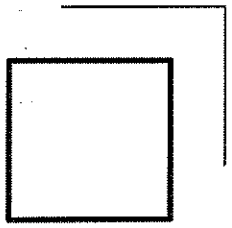
Draw a cube.

Step 1:



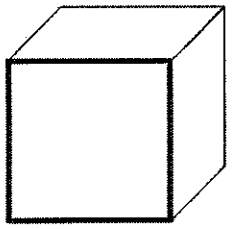
First I draw a square. Then, starting at the middle of the top edge, I draw a line that is parallel to and about the same length as the top edge.

Step 2:



Next, I make a square corner with the right side parallel to the right edge.

Step 3:



Finally, I draw three lines to connect the three corners of the square face to the endpoints and corner of the lines I drew.

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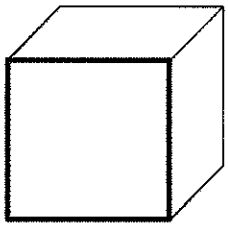
I count the edges by pointing to the ones I see and pointing to the ones I know are hiding! I count 12 edges!



The corners are sharp. There are 4 corners on the front face and 4 corners on the back face. Together that makes 8 corners.

I see 3 faces, and I know 3 are hiding so that makes 6 altogether.

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G2-M8-Lesson 6

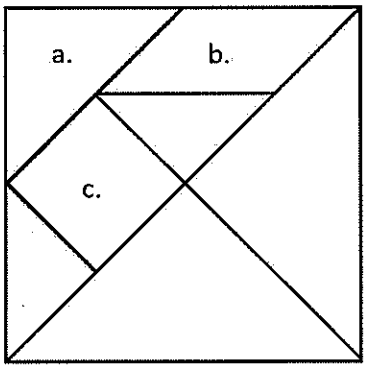
1. Identify each polygon labeled in the tangram as precisely as possible in the space below.

a. *triangle*

b. *parallelogram*

c. *square*

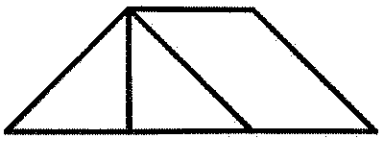
I know letter c is a square. It has 4 square corners, 2 sets of parallel sides, and all the sides are equal in length!



I know letter b is a parallelogram because it has 2 sets of parallel sides but no square corners! 3 sides and 3 angles makes a triangle!

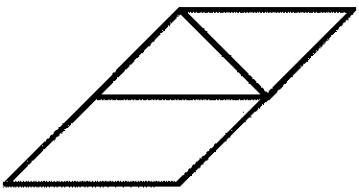
2. Use the parallelogram and the two smallest triangles to make the following polygons. Draw them in the space provided.

a. A quadrilateral with 1 pair of parallel sides



Look, I made a trapezoid! It has 4 straight sides, but they're not all the same length. I know it's a trapezoid because it has at least one pair of parallel sides.

b. A quadrilateral with no square corners



I know this one is a parallelogram. It has 2 pairs of parallel sides and no square corners. I can see a trapezoid hiding inside!

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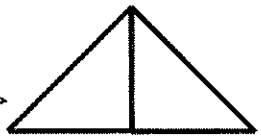
G2-M8-Lesson 7

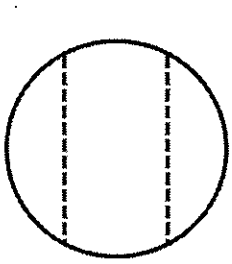
1. Solve the following puzzle using your tangram pieces. Draw your solutions in the space below.

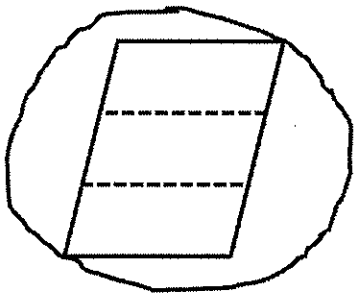
Use the two smallest triangles to make one larger triangle.

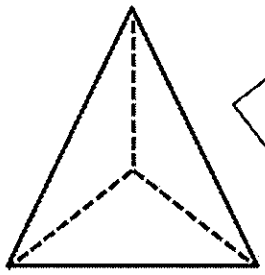


The two small triangles that I use to make one big triangle are the same size. That means this triangle has two equal shares, or two halves!

2. Circle the shapes that show thirds.

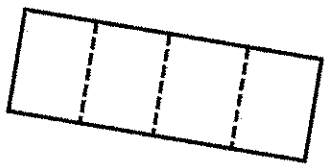






I know this triangle is not cut into thirds because all three parts are not equal shares. The bottom part is bigger than the other ones!

3. Examine the rectangle.



a. How many equal shares does the rectangle have? 4

b. How many fourths are in the rectangle? 4

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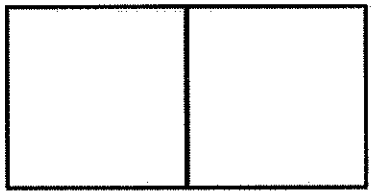
G2-M8-Lesson 8

1. Name the pattern block used to cover half the rectangle. ___*square*___

   Sketch the 2 pattern blocks used to cover both halves of the rectangle.



I can cover the rectangle with 2 squares. The 2 equal shares, or halves, make one whole rectangle.

2. Draw 2 lines to make 3 triangles in the trapezoid below.

Knowing that a triangle has 3 sides helps me figure out where to draw my lines.

   a. Shade 1 triangle. Each triangle is 1 ___*third*___ (half / third / fourth) of the whole trapezoid.

   b. Shade 1 more triangle. Now, 2 ___*thirds*___ (halves / thirds / fourths) of the whole trapezoid are shaded.

   c. Shade 1 more triangle. ___3___ thirds is equal to 1 whole.

If 2 thirds of the trapezoid are shaded, I have 1 third left to shade. Then, 3 thirds will be shaded. That's 1 whole!

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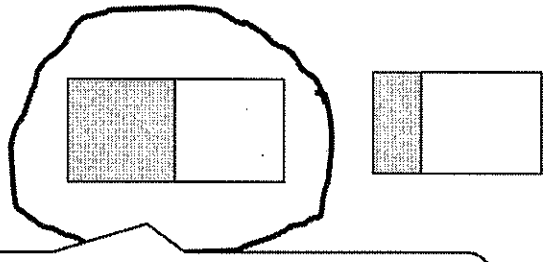
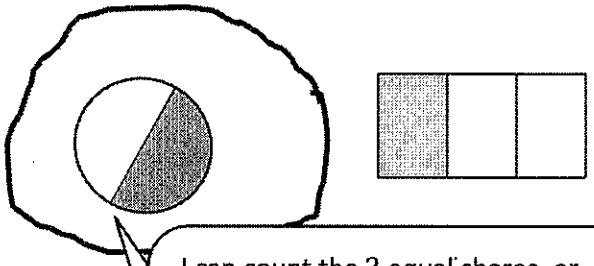
G2-M8-Lesson 9

1. Circle the shapes that have 2 equal shares with 1 share shaded.

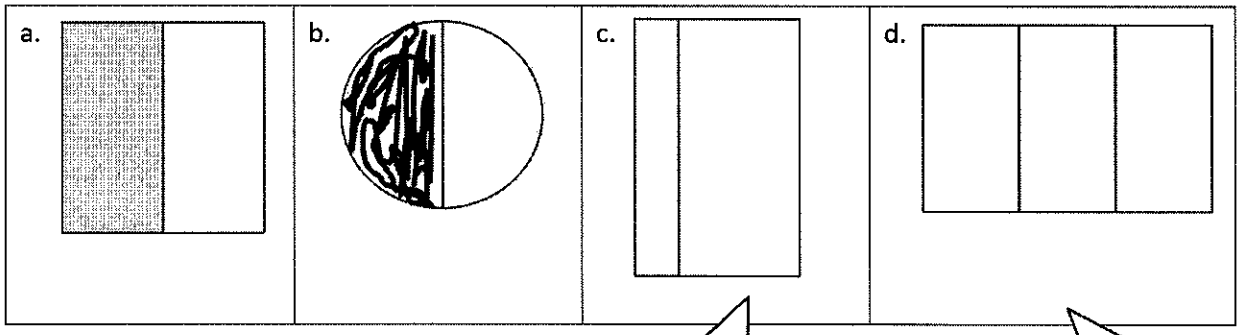


I see 2 equal shares here. The 2 parts of the rectangle are exactly the same size, and one of them is shaded.



I can count the 2 equal shares, or halves, in this circle. I see they are equal because it looks like the circle was folded in half to make 2 parts that are exactly the same.

2. Shade 1 half of the shapes that are split into 2 equal shares. One has been done for you.



This rectangle does not have 2 equal shares. The part on the left is much smaller.

This rectangle has equal shares, but it is partitioned into 3 parts, not 2.

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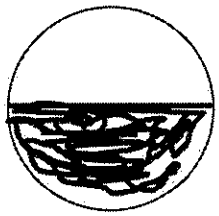
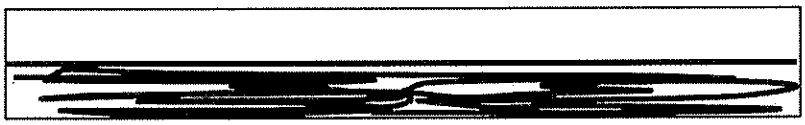
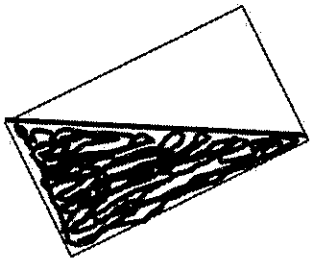
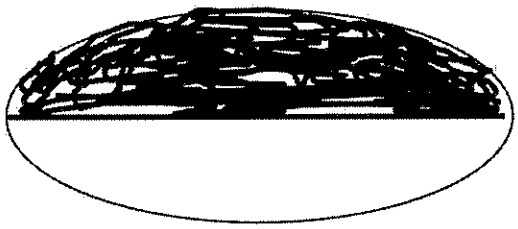
3. Partition the shapes to show halves. Shade 1 half of each. Compare your halves to your partner's.









I can partition, or divide, the shape into halves by drawing a line right through the center, as if I have folded the shape in half. Then, I shade in 1 of the 2 equal shares.

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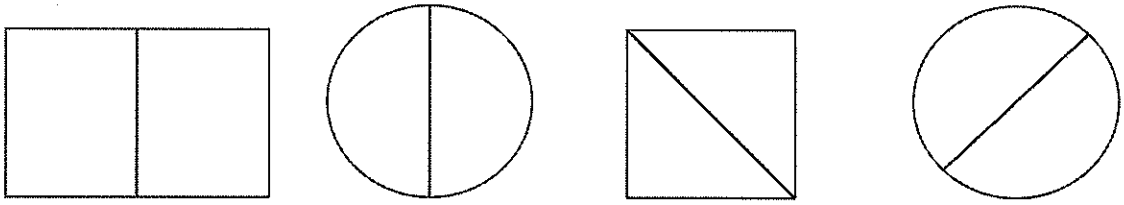
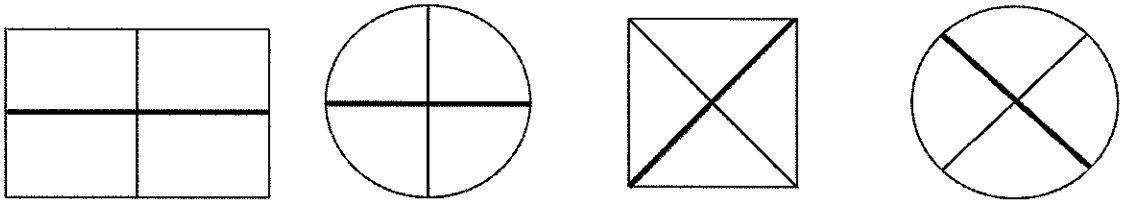
G2-M8-Lesson 10

I know that these shapes show halves because each shape has 2 equal shares.

1. Do the shapes below show halves or thirds? *halves*

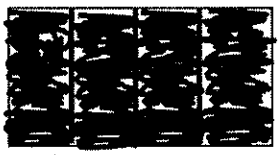


Draw 1 more line to partition each shape into fourths.



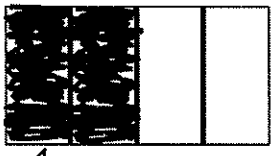
I can partition this shape into fourths by drawing another diagonal line from the opposite corners. That way, there are 4 equal shares!

2. Partition each rectangle into fourths. Then, shade the shapes as indicated.



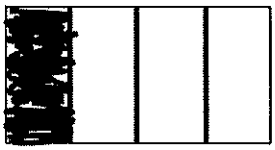
4 fourths

I shade all four to show 4 fourths. 4 fourths is the same as 1 whole!



2 fourths

I can show 2 fourths by shading two parts.



1 fourth

To show 1 fourth, I just shade 1 part!

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3. Split the granola bar below so that Lisa, MJ, and Jessa all have an equal share. Label each student's share with her name.

What fraction of the granola bar did the girls get in all?

3 *thirds*

They shared the whole granola bar! That is 3 thirds!

I split the bar into 3 equal shares because there are 3 people eating it!

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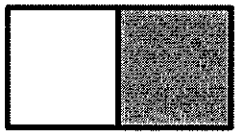
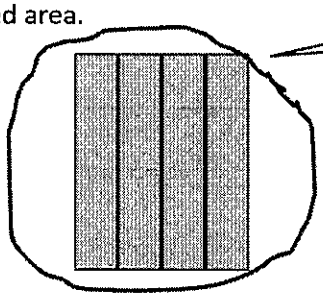
G2-M8-Lesson 11

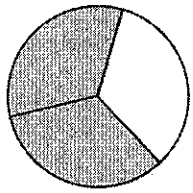
1. For part (a), identify the shaded area.

   a.





4 fourths make 1 whole!

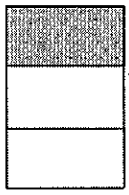


1 half 4 fourths 2 thirds

   b. Circle the shape above that has a shaded area that shows 1 whole.

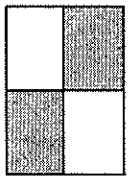
2. What fraction do you need to color so that 1 whole is shaded?

   a.



1 third plus 2 thirds makes 3 thirds. 3 thirds is the same as 1 whole!

   b.

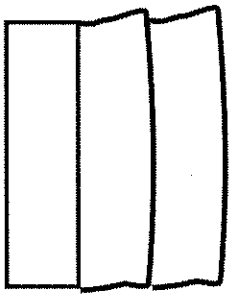


2 thirds *2 fourths*

3. Complete the drawing to show 1 whole.

   This is 1 third.

   Draw 1 whole.



1 third and 1 third and 1 third make a whole; 3 thirds make a whole. I only have 1 third, so I need to draw 2 more!

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G2-M8-Lesson 12

1. Partition the rectangles in 2 different ways to show equal shares.

2 halves

Look, I can show thirds as long, skinny rectangles or short, fat rectangles! They don't need to have the same shape to cover the same amount of space.

3 thirds

I can show fourths in more than one way! As long as the 4 parts cover the same amount of space they are equal, so I have made fourths!

4 fourths

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2. Cut out the rectangle.

a. Cut the rectangle in half to make 2 equal size rectangles. Shade 1 half using your pencil.

I can make 2 equal size rectangles by folding my paper in half the long way.

b. Rearrange the halves to create a new rectangle with no gaps or overlaps.

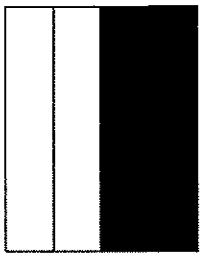
I can line up the rectangles with no gaps or overlaps by making the ends touch.

c. Cut each equal part in half to make 4 equal size rectangles.

I have 2 equal rectangles. If I cut each rectangle into 2 equal shares, I will have 4 equal size rectangles! Now 2 fourths are shaded.

d. Rearrange the new equal shares to create different polygons.

e. Draw one of your new polygons from part (d) below. One half is shaded!



Even though I have a shape that looks different, one half is still shaded!

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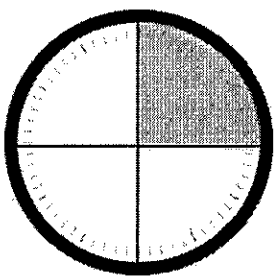
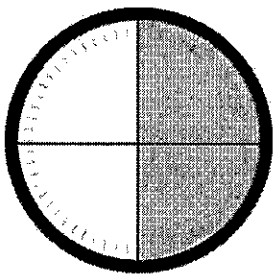
G2-M8-Lesson 13

1. Tell what fraction of each clock is shaded in the space below using the words *quarter, quarters, half,* or *halves*.



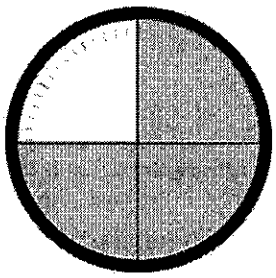
1 *quarter*

1 fourth is the same as 1 quarter!



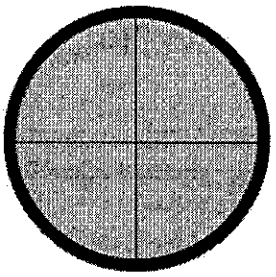
2 *quarters, or 1 half*

I can see this is 1 half because it's just like someone folded it down the center like we did in class!



3 *quarters*

This is just like how we folded our clocks! Fold down the center once for halves, and then fold again to make quarters!



4 *quarters, or 2 halves*

This could also be called 1 whole!

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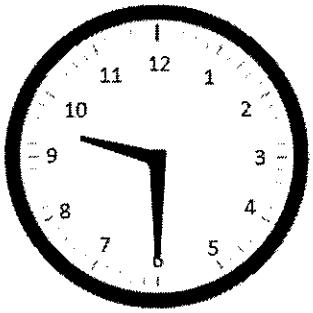
2. Write the time shown on each clock.

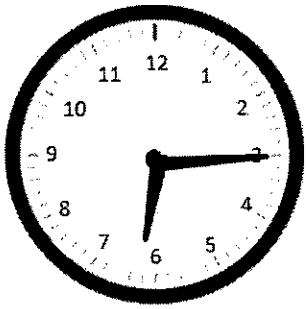
a.



9:30

When the minute hand points to the 6, I skip count by 5's up to 30. So I can say 9:30, or I can say half past 9 since the minute hand has moved halfway around the clock!

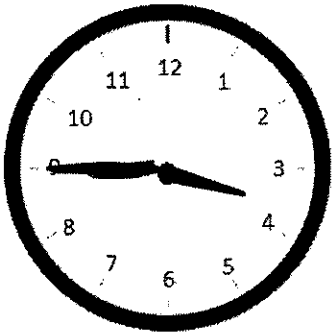
b.



6:15

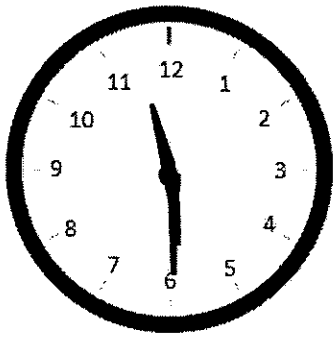
I know that a fourth of the hour has passed. That's 1 quarter!

3. Draw the minute hand on the clock to show the correct time.



3:45

I remember that 1 quarter is 15 minutes, 2 quarters is 30 minutes, and 3 quarters is 45 minutes. 3 quarters of the way around the clock will be at the 9.



11:30

30 minutes is halfway around the clock, or half past the hour. Halfway around the clock is at the 6.

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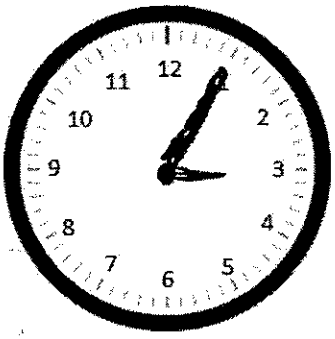
G2-M8-Lesson 14

1. Fill in the missing numbers.

60, 55, 50, 45, 40, 35, 30, 25, 20, 15, 10, 5, 0

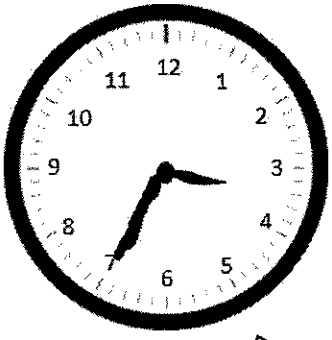
I skip-count back by 5's. It's just like counting back around the clock!

2. Draw the hour and minute hands on the clocks to match the correct time.



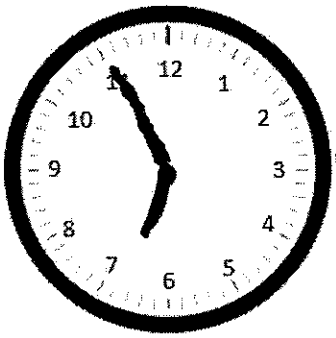
3:05

I know that since it is only 5 minutes past the hour, the hour hand should be pointing at the 3.



3:35

More than half of the hour has passed, so the hour hand should be pointing about halfway between the 3 and 4. I know that when the minute hand is pointing to the 6, it is 30 minutes past the hour. When it's pointing to the 7, I add on 5 minutes, so the clock shows 3:35.



6:55

Since it's 6:55, that means it is almost 7. The hour hand should be pointing right before the 7 since it's just 5 minutes before 7 o'clock.

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G2-M8-Lesson 15

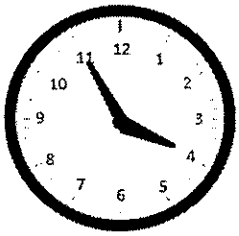
1. Decide whether the activity below would happen in the a.m. or the p.m. Circle your answer.

Waking up for school	(a.m.) / p.m.
Eating dinner	a.m. / (p.m.)
Reading a bedtime story	a.m. / (p.m.)
Making breakfast	(a.m.) / p.m.

A comes before *P* in the alphabet. That's how I remember that a.m. is morning and p.m. is afternoon. The morning comes before the afternoon!

2. What time does the clock show?

3 : 55



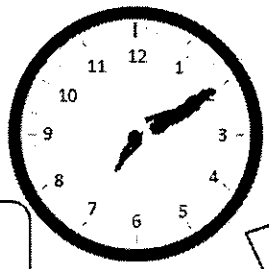
Even though it looks like the hour hand is pointing to the 4, I know it's not 4 o'clock yet because the minute hand shows 55 minutes! I have to wait 5 more minutes!

3. Draw the hands on the analog clock to match the time on the digital clock. Then, circle a.m. or p.m. based on the description given.

Brushing your teeth after you wake up

7:10 (a.m.) or p.m.

I know it's a.m. because it says "after you wake up," and that happens in the morning!

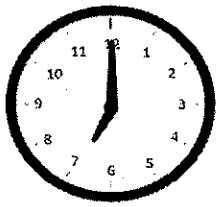


The digital time shows the digits of the hour and the minutes. On the analog clock, the little hand points to the 7 to show the hour. For the minute hand, I can count by 5's to figure out how to show 10 minutes after the hour. 5, 10...so the big hand points to the 2 to show 10 minutes.

4. Write what you might be doing if it were a.m. or p.m.

a.m. *eating breakfast*

p.m. *reading a book*



Usually at 7 in the morning, I am eating breakfast. 7 p.m. is 1 hour before bed, and that's the time I read!

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G2-M8-Lesson 16

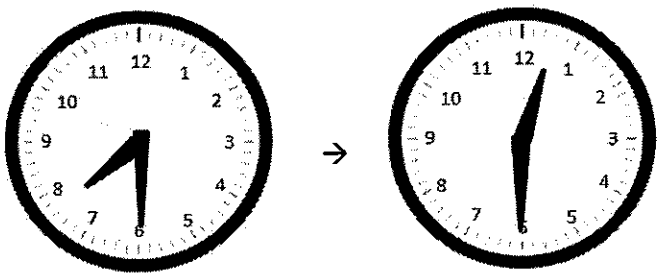
1. How much time has passed?

6:30 a.m. → 7:00 a.m. ***30 minutes***

6:30 is half past the hour. That means that it takes another half to get to the next hour, so 30 minutes have passed.

4:00 p.m. → 9:00 p.m. ***5 hours***

I can add on from 4:00 p.m. to get to 9:00 p.m. $4 + 5 = 9$, so 5 hours have passed.



p.m. a.m.

5 hours

This is tricky because the time changes from p.m. to a.m., but I know that p.m. turns to a.m. at 12.

I see that the minute hand is in the same place on both clocks, so all I need to do is count up from 7 to 12. $7 + 5 = 12$, so, from 7:30 p.m. to 12:30 a.m., 5 hours have passed.

2. Anna spent 3 hours at dance practice. She finished at 6:15 p.m. What time did she start?

? $\xrightarrow{+\ 3\ \textit{hours}}$ 6:15

$6 - 3 = 3$, so 6:15 *minus* 3 *hours is* 3:15.

Anna started at 3:15.

I can use the arrow way with hours and minutes to make solving easier.

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