



4th  
Basic

5th  
Advanced

# Helping With Math

USA  
GRADES

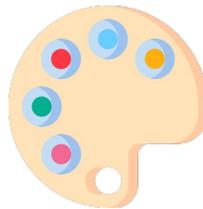
## Reflex Angles

Suitable for students  
aged 8-10



This pack is suitable for learners aged 8 to 10 years old or 4th and 5th graders (USA). The content covers fact files and relevant basic and advanced activities involving reflex angles.

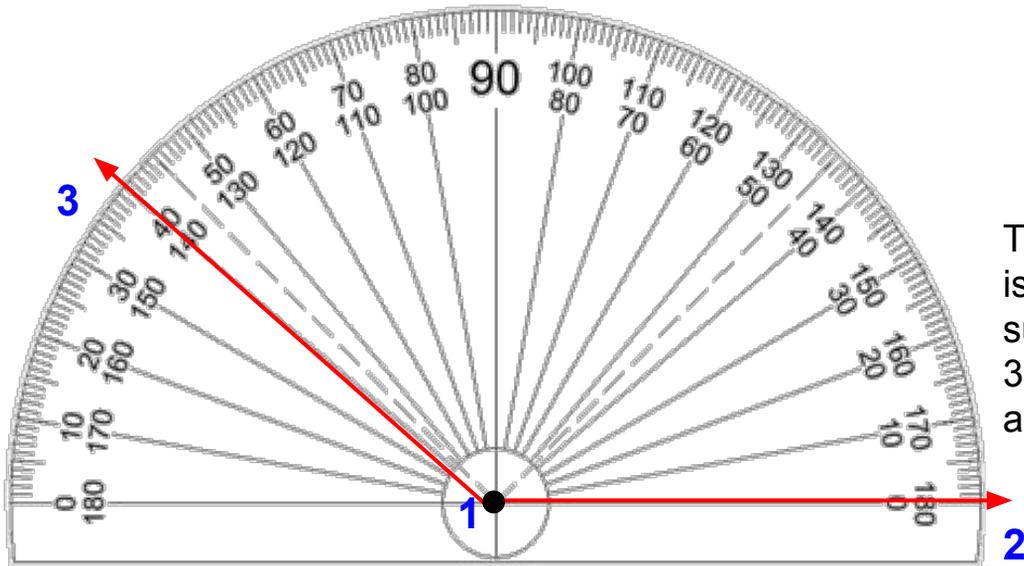
I love Reflex Angles as much as I love arts. Let's learn it together!



- Angles are formed when two rays meet at a vertex.
- It has two parts: arms and vertex. Arms are the two lines that meet to form an angle, while vertex is the corner point where the arms meet.
- A Reflex angle is the type of angle that measures exactly more than  $180^\circ$  but less than  $360^\circ$ .

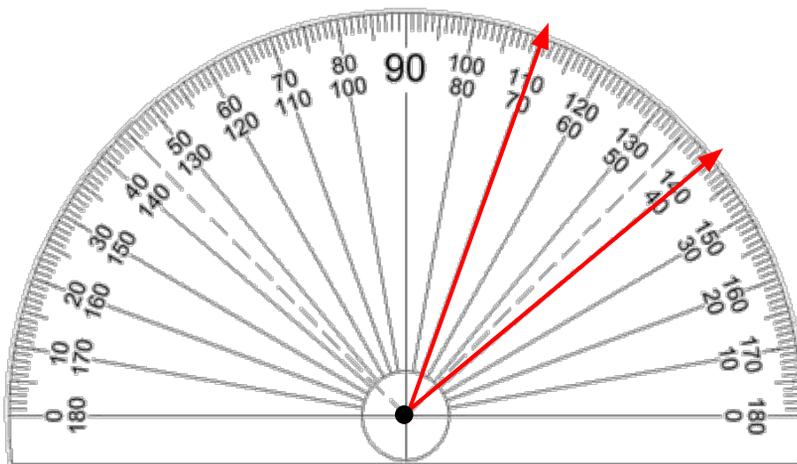


## USING A PROTRACTOR



The inner angle is  $140^\circ$ . When subtracted to  $360^\circ$ , this reflex angle is  $220^\circ$ .

1. Place the vertex of the angle in the middle of the protractor.
2. One of its arm should lie along  $0^\circ$ .
3. Count the measurement of the angle starting from  $0^\circ$ , until it reaches the position of the other arm.
4. Since a whole revolution is at  $360^\circ$ , you need to subtract the inner angle with  $360^\circ$  to get the measurement of a reflex angle.

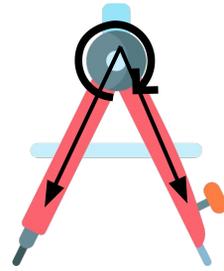
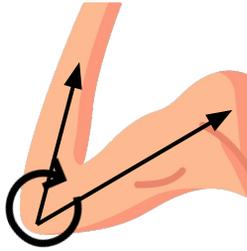
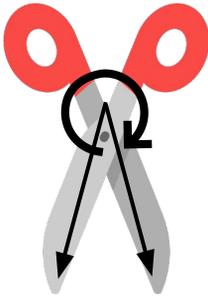


If both arms won't fall on the baseline of the protractor, subtract the given degree measures of one arm to the other.

In this case, subtract  $70^\circ$  or  $110^\circ$  with  $40^\circ$  or  $140^\circ$ , respectively. Either ways, the measurement of this angle is  $30^\circ$ .



## REAL LIFE REFLEX ANGLES



### NOTE!

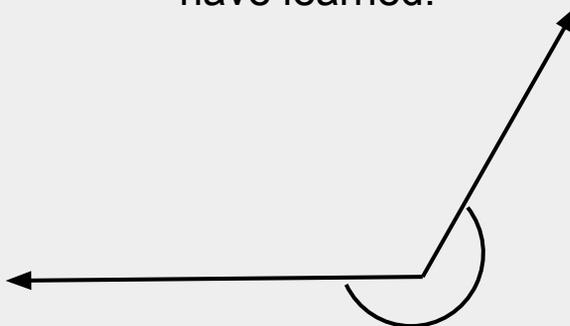
Another way to measure reflex angles is to measure the outer angle. Once you have measured the outer angle, add  $180^\circ$  to it.

In the example in the previous page, we subtracted the inner angle ( $140^\circ$ ) to  $360^\circ$  and we got  $220^\circ$ .

If we measure the outer angle, we will get  $40^\circ$ , and adding  $180^\circ$  will give us the same answer which is  $220^\circ$ .

### TRY THIS OUT!

Measure this reflex angle based on what you have learned.



# TABLE OF ACTIVITIES

| <b>Ages 8-9</b> (Basic)     |                   | <u>4th Grade</u> |
|-----------------------------|-------------------|------------------|
| 1                           | Practice Drawing  |                  |
| 2                           | Angles on Frames  |                  |
| 3                           | Folding Origamis  |                  |
| 4                           | Our First Project |                  |
| 5                           | New Painting      |                  |
| <b>Ages 9-10</b> (Advanced) |                   | <u>5th Grade</u> |
| 6                           | Mona Lisa         |                  |
| 7                           | Support the Films |                  |
| 8                           | Help the Artists  |                  |
| 9                           | Theater Play      |                  |
| 10                          | First Painting    |                  |



# PRACTICE DRAWING

G4  
Basic

Enhance your skills in drawing while illustrating the given angles below. Identify also the type of angles whether reflex, obtuse, acute, right or straight.

|               |       |               |       |
|---------------|-------|---------------|-------|
| 1. $75^\circ$ | Draw: | 2. $90^\circ$ | Draw: |
| Type:         |       | Type:         |       |



|                |       |                |       |
|----------------|-------|----------------|-------|
| 3. $125^\circ$ | Draw: | 4. $220^\circ$ | Draw: |
| Type:          |       | Type:          |       |



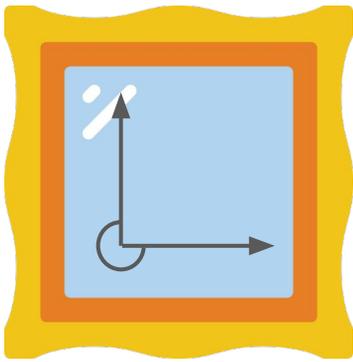
|                |       |                |       |
|----------------|-------|----------------|-------|
| 5. $200^\circ$ | Draw: | 6. $180^\circ$ | Draw: |
| Type:          |       | Type:          |       |



# ANGLES ON FRAMES

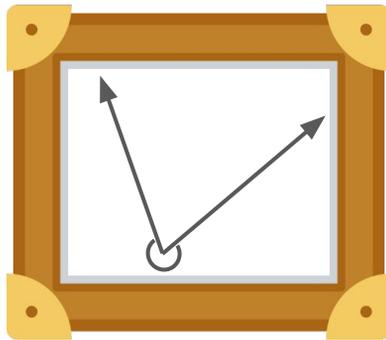
G4  
Basic

Sarah visited the museum and saw reflex angles posted on the walls. Find the measurement of each reflex angles.



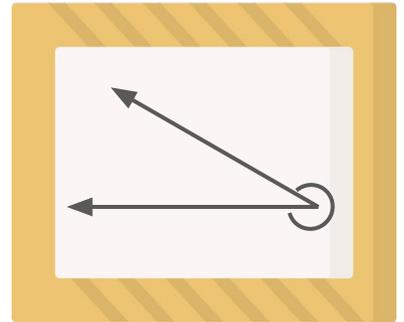
1.

\_\_\_\_\_



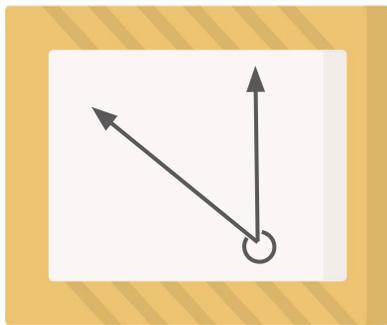
2.

\_\_\_\_\_



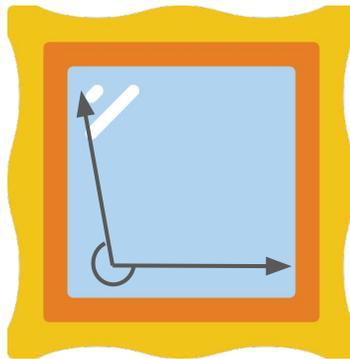
3.

\_\_\_\_\_



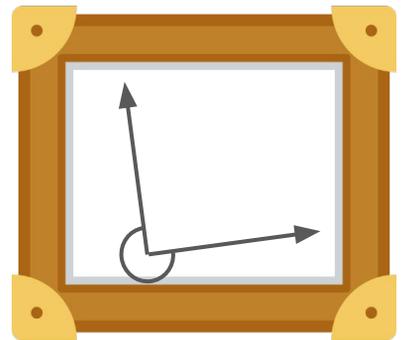
4.

\_\_\_\_\_



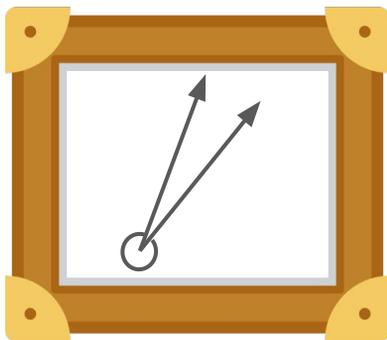
5.

\_\_\_\_\_



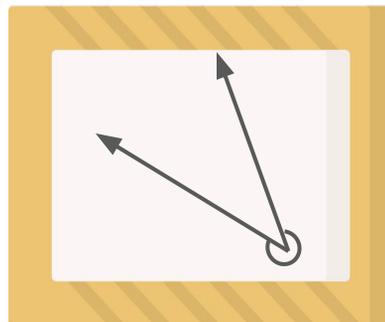
6.

\_\_\_\_\_



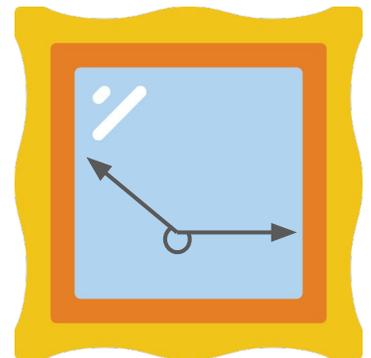
7.

\_\_\_\_\_



8.

\_\_\_\_\_



9.

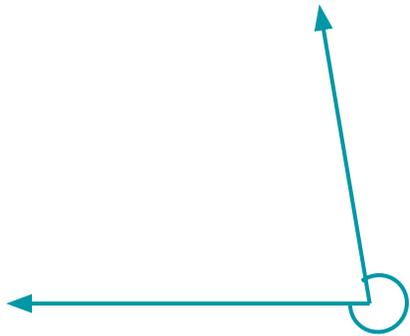
\_\_\_\_\_



# FOLDING ORIGAMIS

G4  
Basic

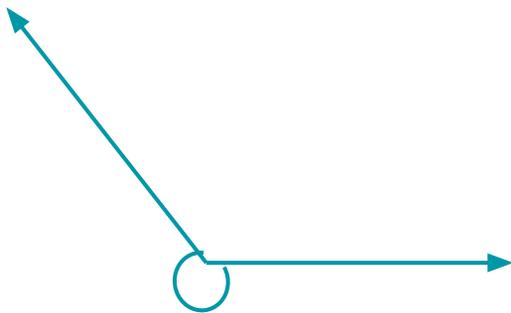
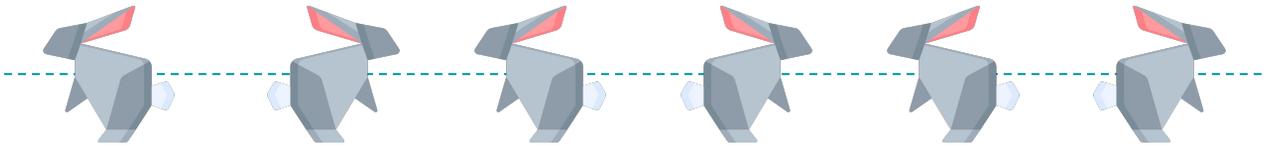
Origamis are fun to make. Folding each side has its own measurements just like the angles below. Measure the interior and exterior angles of the figures below, and give its measurement.



Interior Angle: \_\_\_\_\_

Exterior Angle: \_\_\_\_\_

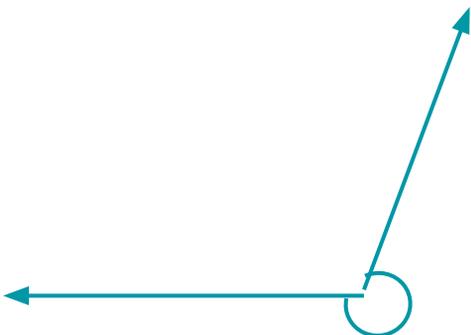
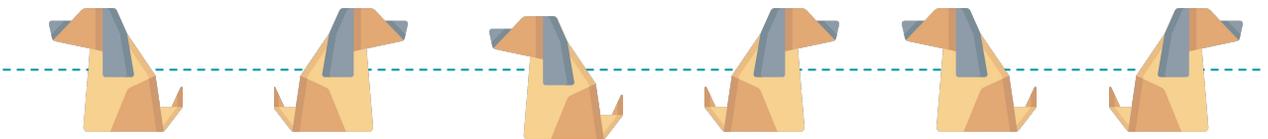
Angle Measurement: \_\_\_\_\_



Interior Angle: \_\_\_\_\_

Exterior Angle: \_\_\_\_\_

Angle Measurement: \_\_\_\_\_



Interior Angle: \_\_\_\_\_

Exterior Angle: \_\_\_\_\_

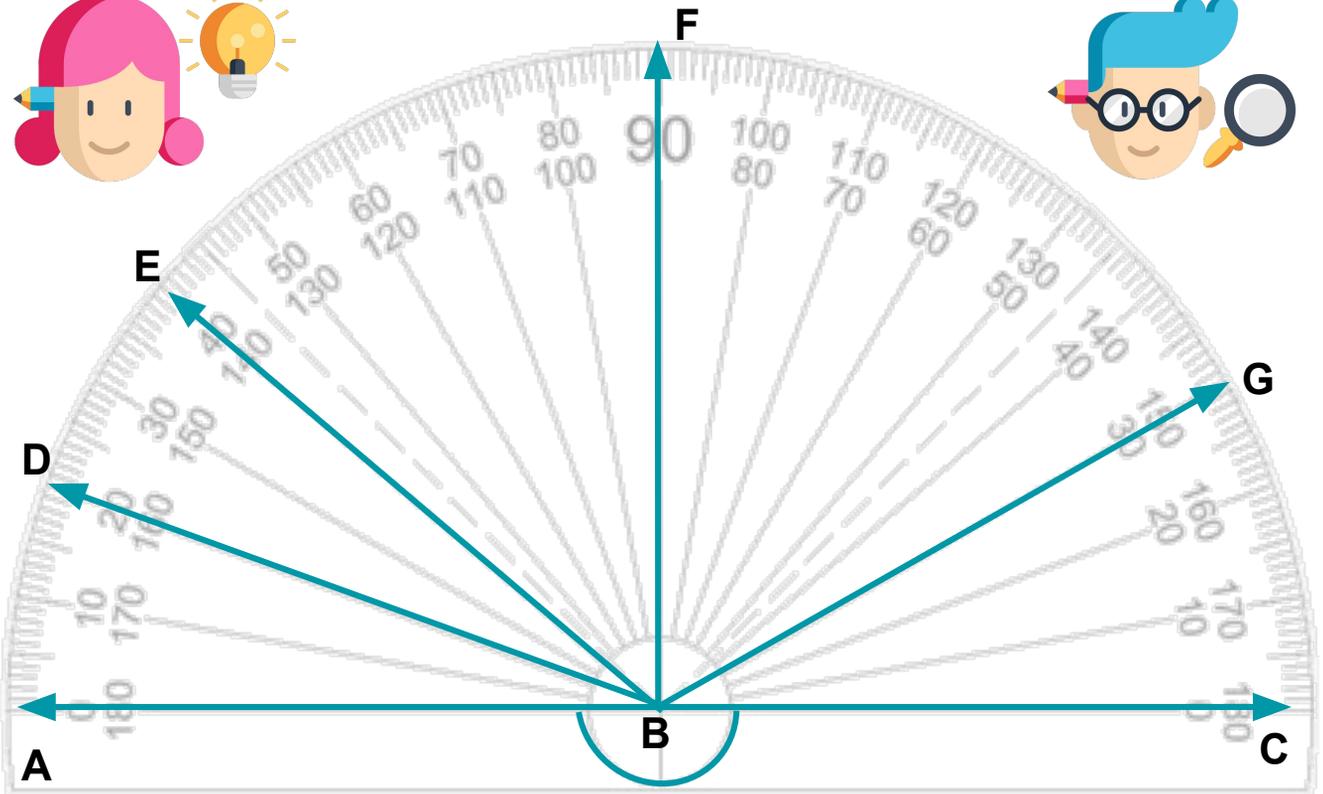
Angle Measurement: \_\_\_\_\_



# OUR FIRST PROJECT

G4  
Basic

Steve and Karen are working on their first project together. Help them identify the measurements of the given reflex angles so they can come up with a plan.



1.  $\angle ABD =$

4.  $\angle EBG =$

2.  $\angle ABF =$

5.  $\angle DBF =$

3.  $\angle CBE =$

6.  $\angle FBG =$



# NEW PAINTING

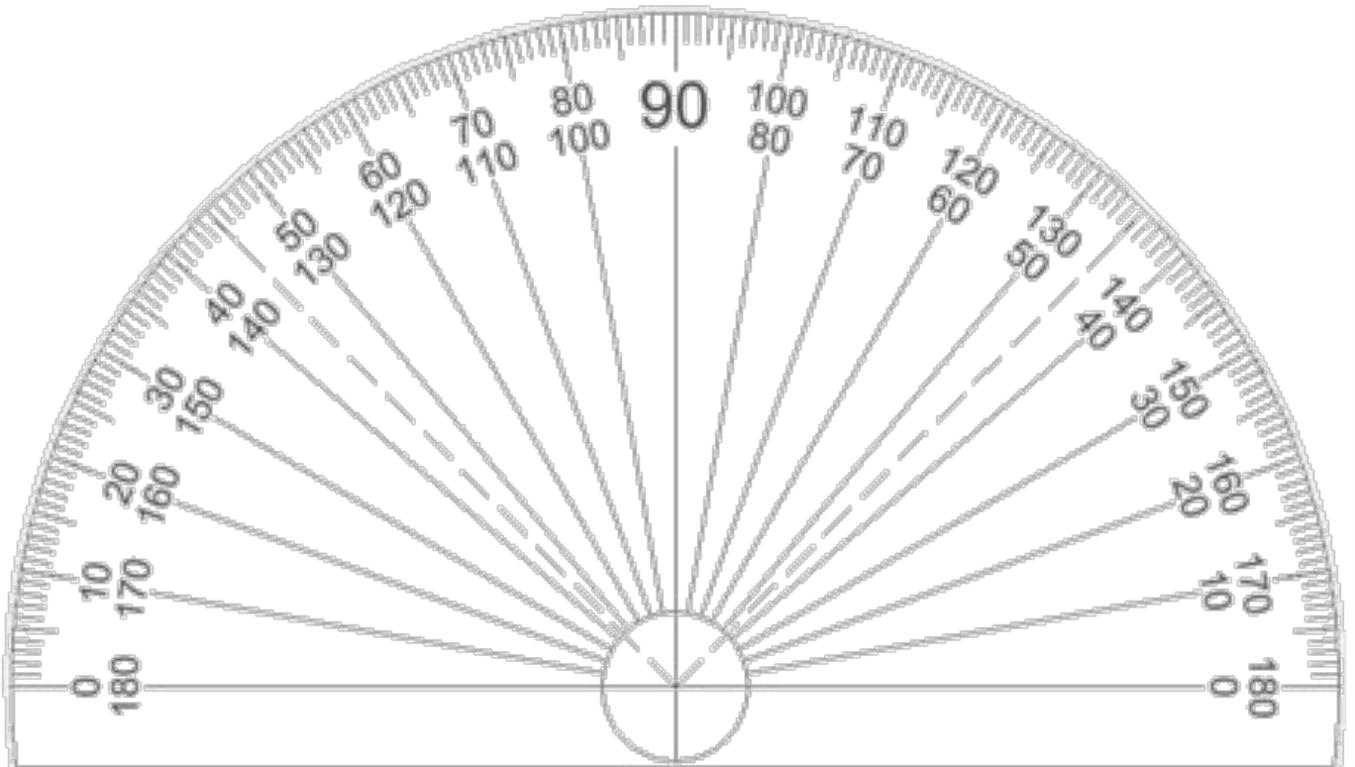
G4  
Basic

Lauren is going to start his new painting and is looking for someone to help him out. Can you plot the reflex angles that he is looking for?



Be part of my masterpiece and plot the following reflex angles.

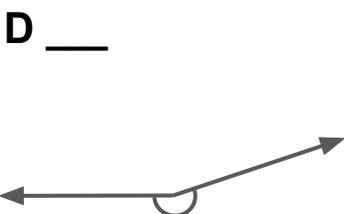
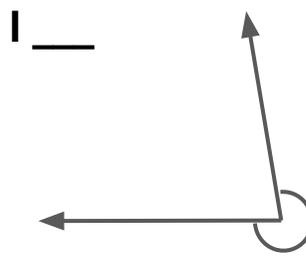
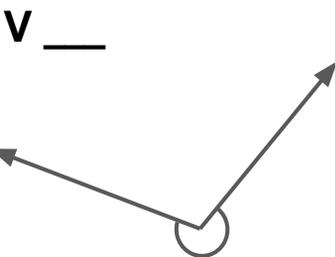
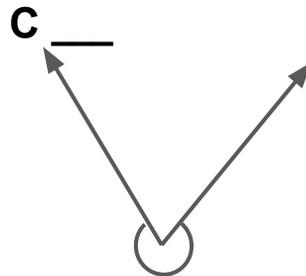
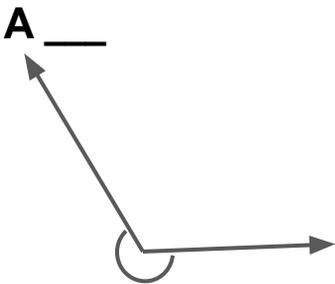
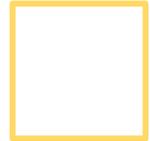
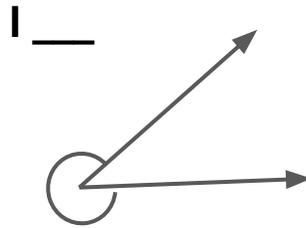
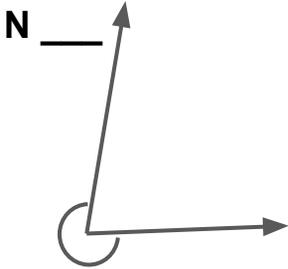
1.  $220^\circ$
2.  $340^\circ$
3.  $190^\circ$
4.  $240^\circ$
5.  $200^\circ$



# MONA LISA

G5  
Advanced

Mona Lisa is one of the famous artworks in the world. Learn who painted it by identifying the measurements of each angles, and arranging them from least to greatest.



Who am I?

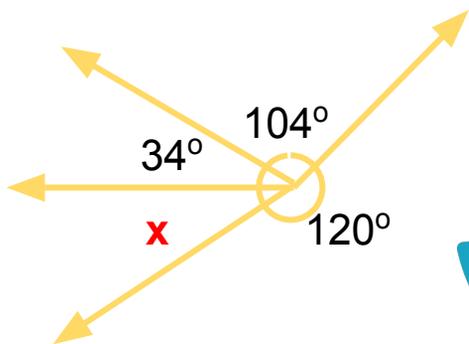


# SUPPORT THE FILMS

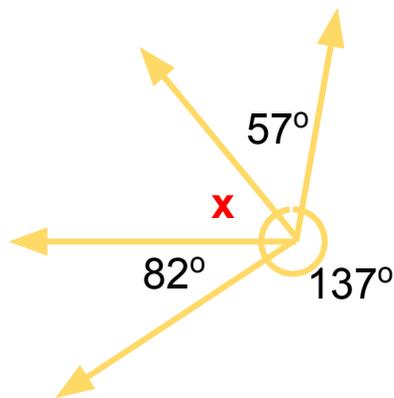
G5  
Advanced

Filmmaking is also a form of an art. Support your favorite filmmakers and find the missing angles. Remember that a  $360^\circ$  turn makes up a whole rotation.

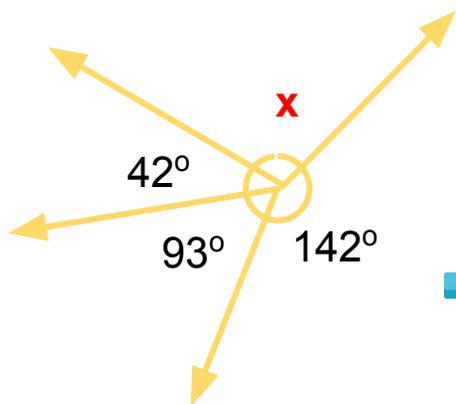
1.



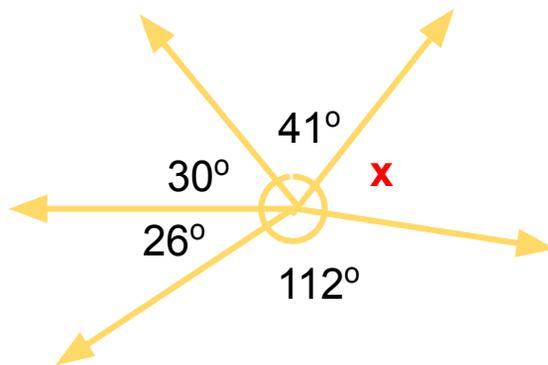
2.



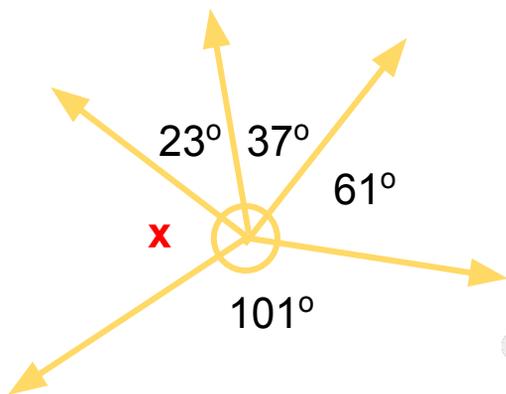
3.



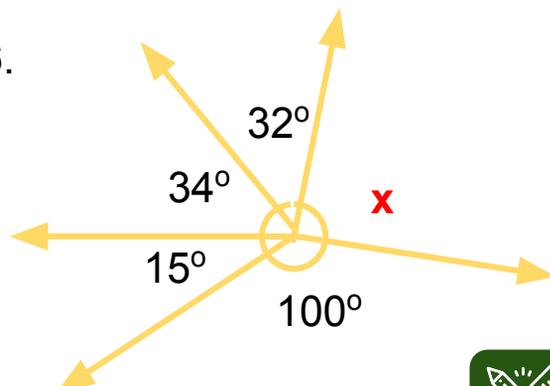
4.



5.



6.



# HELP THE ARTISTS

G5  
Advanced

The artists below are looking for answers for their question. Can you try answering their questions?



If an acute angle is at  $50^\circ$ , what is its equivalent reflex angle?

\_\_\_\_\_

What is the equivalent reflex angle of a right angle?

\_\_\_\_\_



If an obtuse angle is at  $125^\circ$ , what is its equivalent reflex angle?

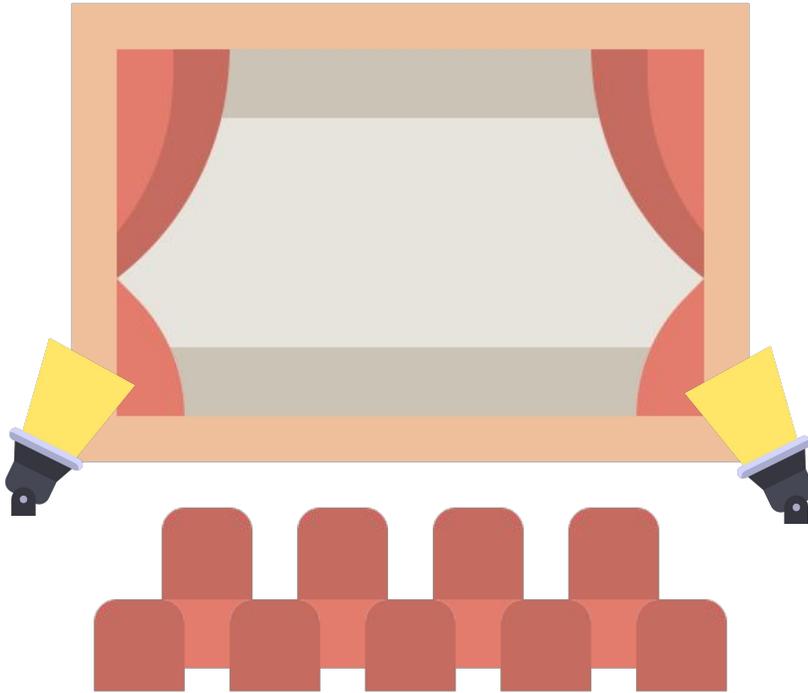
\_\_\_\_\_



# THEATER PLAY

G5  
Advanced

You have been invited to watch a play in one of the biggest theaters. Get there on time and answer the following questions below.



1. If a reflex angle is measured at  $300^\circ$ , what is its equivalent acute angle?  
\_\_\_\_\_

2. A reflex angle measured at  $220^\circ$  has an equivalent obtuse angle measured at \_\_\_\_\_.

3. A reflex angle measured at  $320^\circ$  has an equivalent acute angle measured at \_\_\_\_\_.

4. If a reflex angle is measured at  $240^\circ$ , what is its equivalent obtuse angle?  
\_\_\_\_\_

# FIRST PAINTING

G5  
Advanced

It is Sarah's first time to paint. Give her some ideas for her first painting by drawing the given reflex angles below.



Draw a  $250^\circ$  reflex angle.

Draw a  $330^\circ$  reflex angle.

Draw a  $290^\circ$  reflex angle.



# ANSWER GUIDE

## Activity 1

1. Acute Angle



4. Reflex Angle



2. Right Angle



5. Reflex Angle



3. Obtuse Angle



6. Straight Angle



## Activity 2

1.  $270^\circ$

4.  $310^\circ$

7.  $340^\circ$

2.  $290^\circ$

5.  $260^\circ$

8.  $320^\circ$

3.  $330^\circ$

6.  $270^\circ$

9.  $220^\circ$

## Activity 3

1. Interior:  $80^\circ$  Exterior:  $100^\circ$  Measurement:  $280^\circ$

2. Interior:  $130^\circ$  Exterior:  $50^\circ$  Measurement:  $230^\circ$

3. Interior:  $110^\circ$  Exterior:  $70^\circ$  Measurement:  $250^\circ$

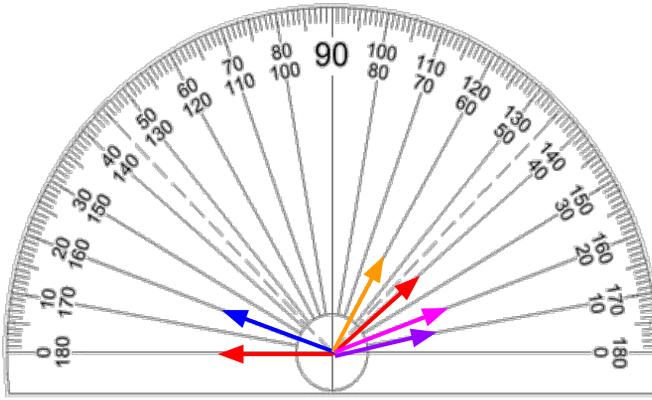
## Activity 4

1.  $340^\circ$  2.  $270^\circ$  3.  $220^\circ$  4.  $250^\circ$  5.  $290^\circ$  6.  $300^\circ$



# ANSWER GUIDE

## Activity 5



1, 2, 3, 4, 5

## Activity 6

D - 200 A - 240 V - 250 I1 - 260 N - 280 C - 290 I2 - 320  
Word formed: Da Vinci

## Activity 7

1.  $102^\circ$  2.  $84^\circ$  3.  $83^\circ$  4.  $151^\circ$  5.  $138^\circ$  6.  $179^\circ$

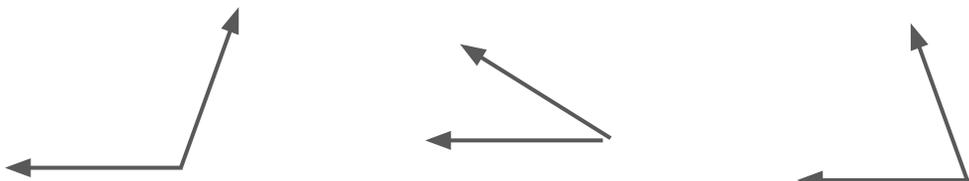
## Activity 8

1.  $310^\circ$  2.  $270^\circ$  3.  $235^\circ$

## Activity 9

1.  $60^\circ$  2.  $140^\circ$  3.  $40^\circ$  4.  $120^\circ$

## Activity 10



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