

Learning Strand 3
Mathematical and Problem Solving Skills
LINES AND ANGLES

Accreditation and Equivalency (A&E) Program Module



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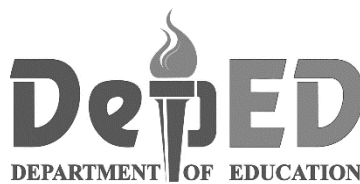
1. Please do not fold the pages.
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3. Please do not cut out any pictures.
4. Please never detach or tear any page.
5. Please do not leave it open or lying face down when not in use.
6. Please do not use pencils, ballpens, or thick objects as bookmarks.
7. Please do not force the book into a packed schoolbag.
8. Please do not use it to cover your head when it is raining.
9. Please do not sit on it.

Elementary

Learning Strand 3
Mathematical and Problem Solving Skills
LINES AND ANGLES



Accreditation and Equivalency (A&E) Program Module



Learning Strand 3 - Elementary
Alternative Learning System
Lines and Angles
First Edition, 2023

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User's Guide

For the ALS Learner:

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:



What Is This Module About?

This will give you an idea of the skills or competencies you are expected to learn in the module.



Let's See What You Already Know

This part includes an activity that aims to check what you already know about the lesson. If you get all the answers correct (100%), you may decide to skip



What Will You Learn from This Module?

This contains objective/s or the learning competencies in a lesson. This may include a brief rationale on what you will learn.



Let's Do This

This part gives instruction to the learner to perform the activity/ies as mentioned-above to ensure learning the competencies or the objectives.



Let's Study and Analyze

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.



Let's Try This

This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.



Let's See What You Have Learned

This section provides an activity that will help you transfer your new knowledge or skill in real-life situations or concerns.



Let's Remember and Review

This contains key concepts taken from all the lessons covered in every module.



Explore More

This is an activity in a form that increase the strength of the response and tends to induce repetitions of actions/learning.



What Have You Learned?

This is a task which aims to evaluate your level of mastery in achieving the given learning competency.



Answer Key

This contains answers to all activities in the module.

Glossary

This portion gives information about the meanings of the specialized words used in the module.

Reference

This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer the Pre-assessment before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your ALS Teacher/Instructional Manager/Learning Facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your ALS Teacher/Instructional Manager/Learning Facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it.

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What Is This Module About?

This module was designed and written with you in mind. It will tell you a line and different kinds of lines. It also tells you what an angle is and its kind and how an angle is measured. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

The module is divided into two lessons, namely:

Lesson 1 – Identifying Types of Lines **(LS3MP-G-PSC-LE-14)**

Lesson 2 – Measuring and Identifying Angles **(LS3MP-G-PSC-BL/LE/AE-6)**



Let's See What You Already Know

Direction: Write the letter of the correct answer.

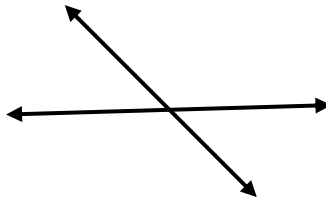
A. Identify each pair of lines as parallel, intersecting, or perpendicular lines.

1.



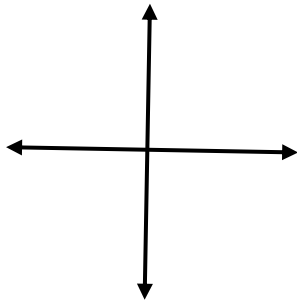
a. intersecting b. parallel c. perpendicular

2.



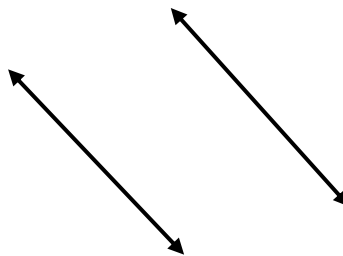
a. intersecting b. parallel c. perpendicular

3.



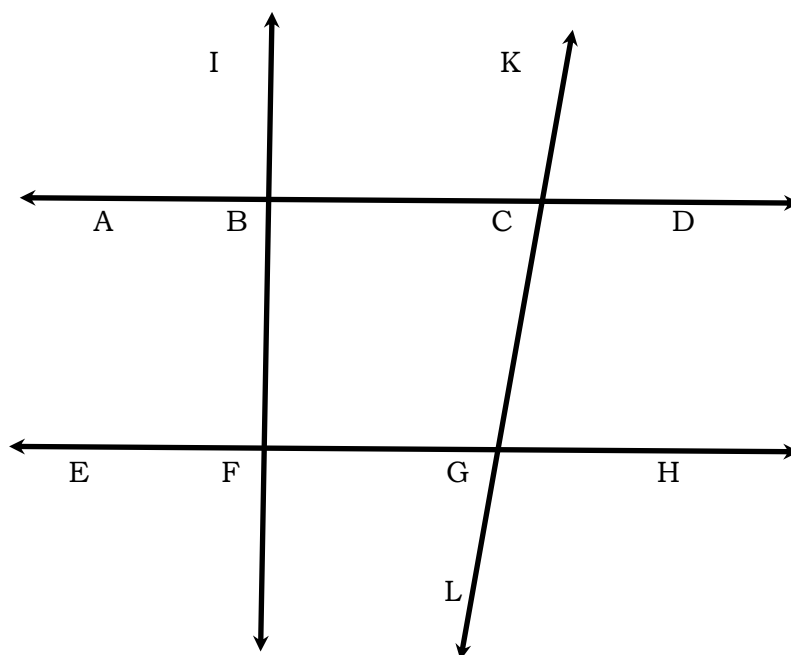
a. intersecting b. parallel c. perpendicular

4.



a. intersecting b. parallel c. perpendicular

B. Use the protractor to measure the angles from the given figure and complete the table below.



Name of Angle	Measurement	Types of Angles
1. $\angle KCD$		
2. $\angle HGL$		
3. $\angle ABI$		
4. $\angle FGL$		
5. $\angle CGF$		



What Will You Learn from This Module?

After going through this module, you are expected to:

- draw different types of angles found in the objects used in daily life, e.g., right angles, acute angles, obtuse angles
 - identify different types of lines, such as perpendicular, parallel, and intersecting lines in real objects
 - measure an angle using a protractor



Let's Do This

Do you see lines in the picture?
Identify the types of lines in the figure.

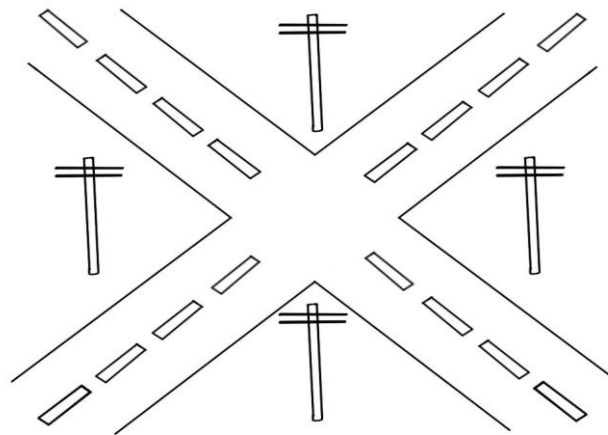


Figure 1

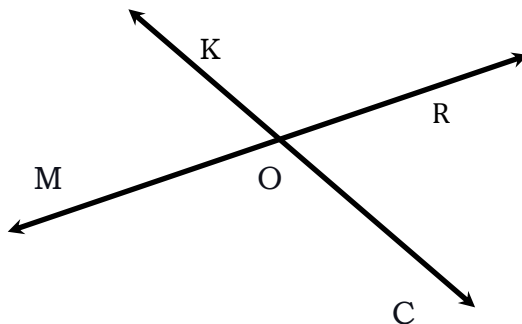
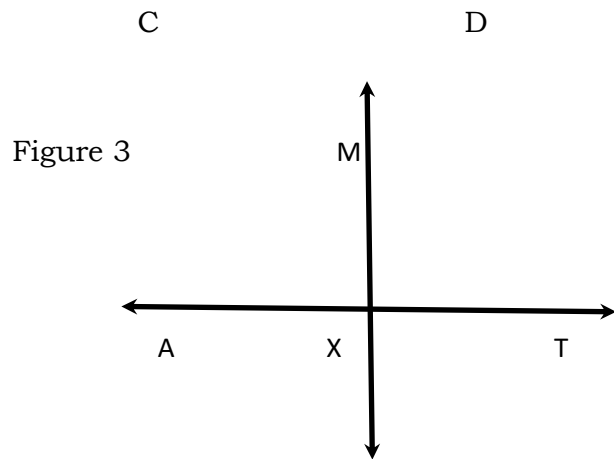


Figure 2

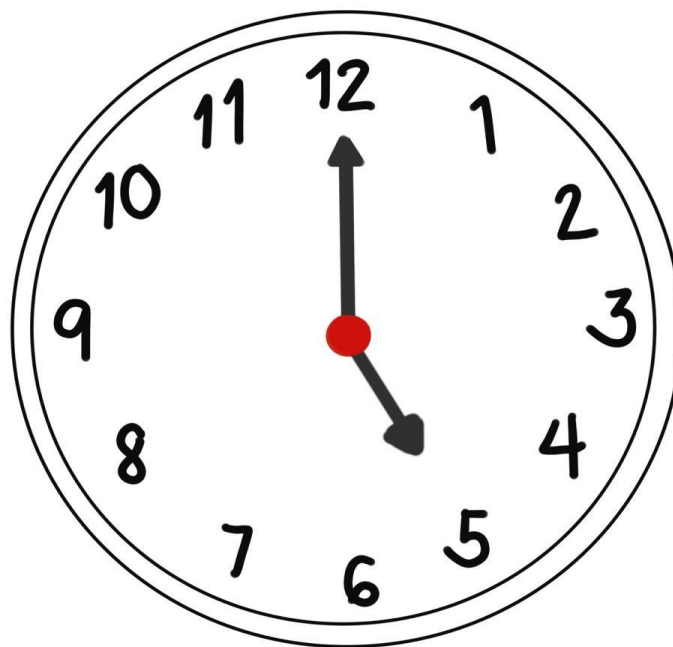




What do you notice about $\overleftrightarrow{KC}$ and $\overleftrightarrow{MR}$ in Figure 1?

What do you notice about $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ in Figure 2?

What do you notice about $\overleftrightarrow{AT}$ and $\overleftrightarrow{MH}$ in Figure 3?



Look at the clock.

What time is it?

What do you notice about the hands of the clock?

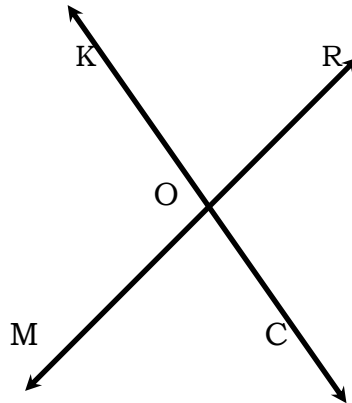


Let's Study and Analyze

In Figure 1, $\overleftrightarrow{KC}$ and $\overleftrightarrow{MR}$, they meet each other at point O.

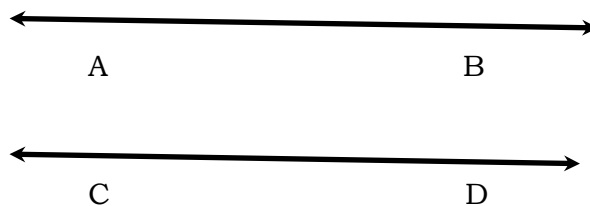
Intersecting lines are lines that meet / intersect each other.

$\overleftrightarrow{KC}$ intersects $\overleftrightarrow{MR}$ at O



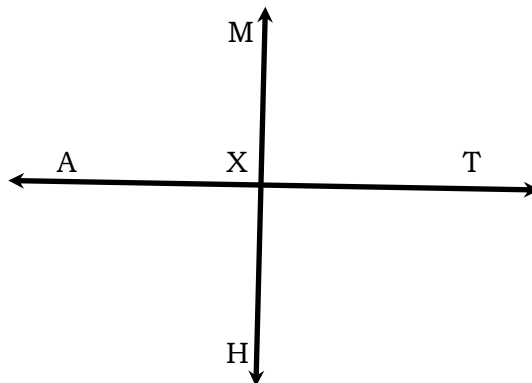
In Figure 2, $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ they do not meet / intersect each other.

Parallel lines are lines that do not intersect each other.



In Figure 3, $\overleftrightarrow{AT}$ and $\overleftrightarrow{MH}$, they intersect each other.

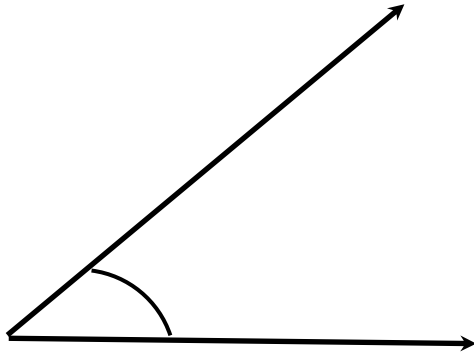
Perpendicular lines are lines that intersect each other and form a right angle.



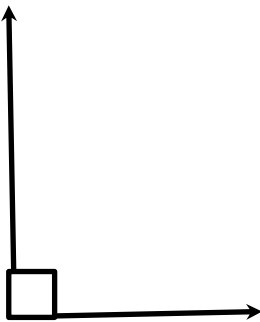
An **angle** is formed by two rays, called the sides of the angle, sharing a common endpoint called a **vertex**.

TYPES OF ANGLES

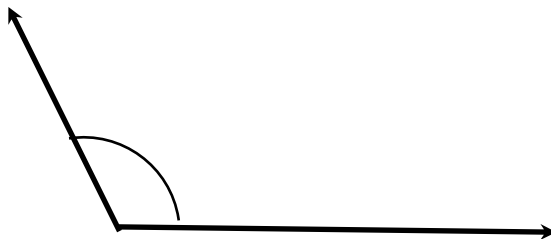
1. Acute angle is an angle that measures less than 90° .



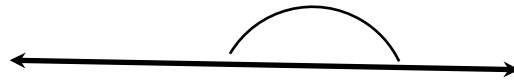
2. Right angle is an angle that measures exactly 90° .



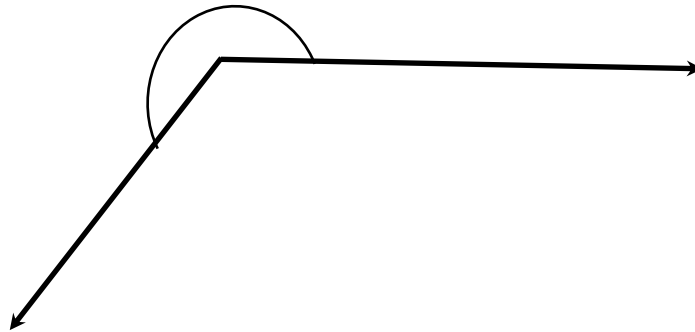
3. Obtuse angle is an angle that measures greater than 90° but less than 180° .



4. Straight angle is an angle that measures exactly 180° .



5. Reflex angle is an angle that measures greater than 180°

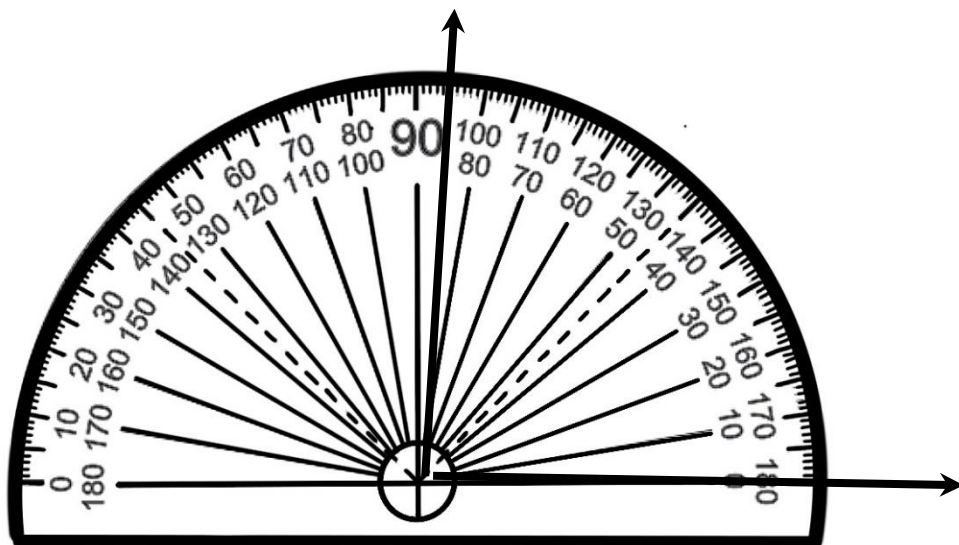


A **protractor** is a device used to measure an angle.

Degree $^\circ$ is the unit of measurement for angles.

Steps in Using a Protractor

1. Place the center mark of the protractor at the vertex of the angle.
2. Place the zero mark of one scale on one side of the angle.
3. Refer to this scale to read the mark on the other side of the angle.

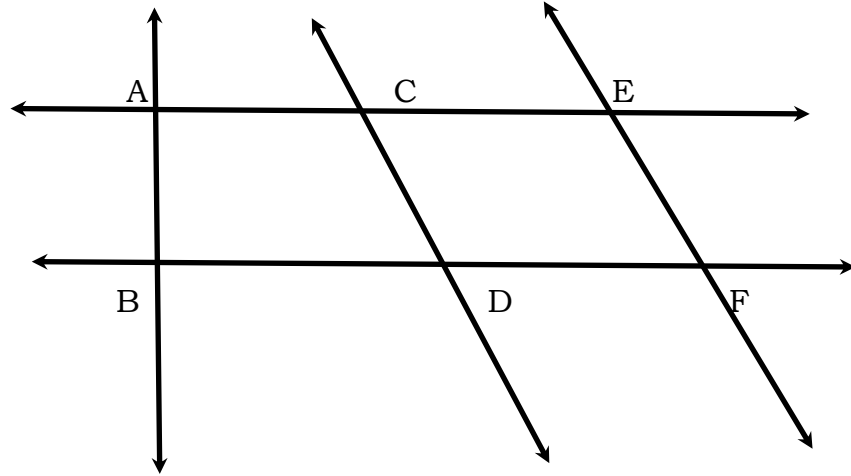




Let's Try This

ACTIVITY 1

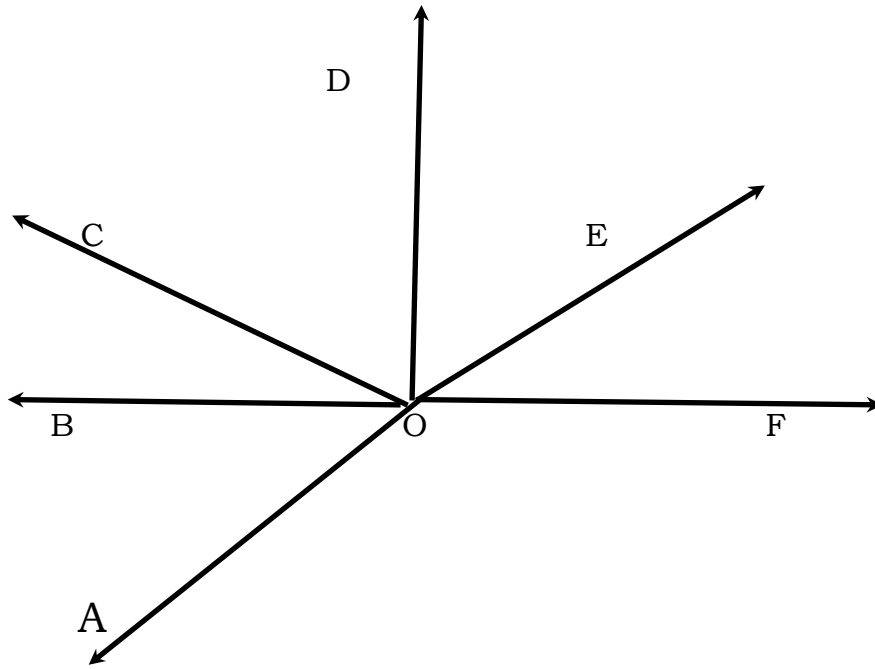
A. Study the figure below. Write **parallel**, **intersecting**, or **perpendicular** in each pair of lines.



1. $\overleftrightarrow{AC}$ and $\overleftrightarrow{CD}$ _____
2. $\overleftrightarrow{AC}$ and $\overleftrightarrow{BD}$ _____
3. $\overleftrightarrow{AB}$ and $\overleftrightarrow{BD}$ _____
4. $\overleftrightarrow{BD}$ and $\overleftrightarrow{CD}$ _____
5. $\overleftrightarrow{AC}$ and $\overleftrightarrow{AB}$ _____
6. $\overleftrightarrow{CD}$ and $\overleftrightarrow{EF}$ _____
7. $\overleftrightarrow{AE}$ and $\overleftrightarrow{AB}$ _____
8. $\overleftrightarrow{CE}$ and $\overleftrightarrow{EF}$ _____
9. $\overleftrightarrow{AB}$ and $\overleftrightarrow{BF}$ _____
10. $\overleftrightarrow{CD}$ and $\overleftrightarrow{DF}$ _____

ACTIVITY 2

Using a protractor, measure the angles and determine the types of angles.



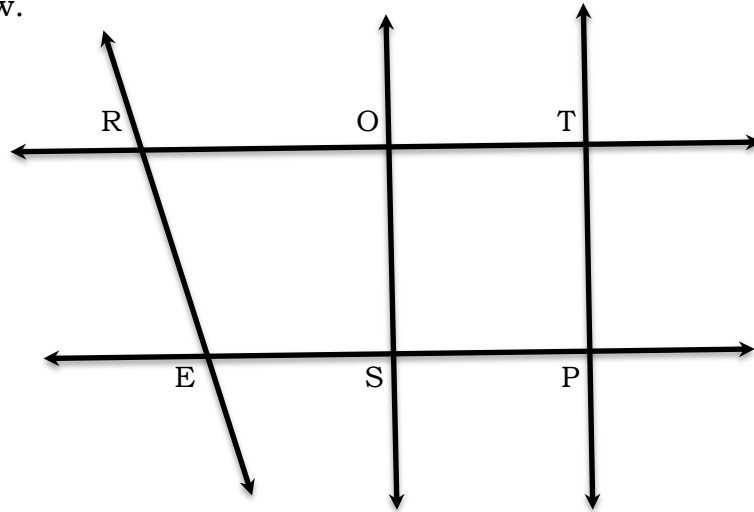
Name of Angle	Measurement	Types of Angles
1. $\angle COF$		
2. $\angle AOF$		
3. $\angle EOF$		
4. $\angle BOF$		
5. $\angle DOF$		



Let's See What You Have Learned

Direction: Write the letter of the correct answer.

A. Identify each pair of lines as **parallel**, **intersecting**, or **perpendicular** in the figure below.



- | | | | |
|---|-----------------|-------------|------------------|
| 1. $\overleftrightarrow{RE}$ and $\overleftrightarrow{RO}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 2. $\overleftrightarrow{RO}$ and $\overleftrightarrow{ES}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 3. $\overleftrightarrow{OS}$ and $\overleftrightarrow{ES}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 4. $\overleftrightarrow{RE}$ and $\overleftrightarrow{ES}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 5. $\overleftrightarrow{OS}$ and $\overleftrightarrow{EP}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 6. $\overleftrightarrow{RE}$ and $\overleftrightarrow{RT}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 7. $\overleftrightarrow{OS}$ and $\overleftrightarrow{TP}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 8. $\overleftrightarrow{RE}$ and $\overleftrightarrow{EP}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 9. $\overleftrightarrow{RT}$ and $\overleftrightarrow{EP}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 10. $\overleftrightarrow{OT}$ and $\overleftrightarrow{OS}$ | A. Intersecting | B. Parallel | C. Perpendicular |

B. Identify all the angles found in the figures.

Figure 1 _____

Figure 4 _____

Figure 2 _____

Figure 5 _____

Figure 3 _____



Figure 1

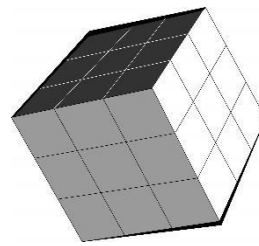


Figure 2

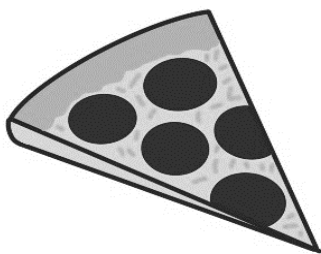


Figure 3



Figure 4

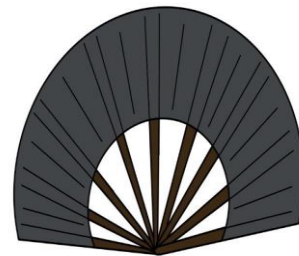


Figure 5

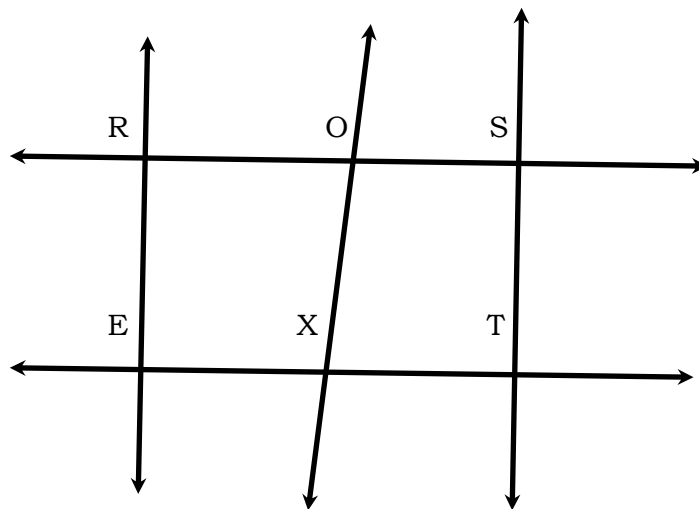


Let's Remember and Review

A. Fill in the blanks.

1. It has arrows at both ends to show that it goes on and on in both directions and can be named by using two capital letters. It is called a _____.
2. Lines that meet/intersect each other are called _____.
3. Lines that do not intersect each other are called _____.
4. Lines that intersect each other and form a right angle are called _____.

B. Study the figure. Identify each pair of lines as **parallel**, **intersecting**, or **perpendicular lines**.

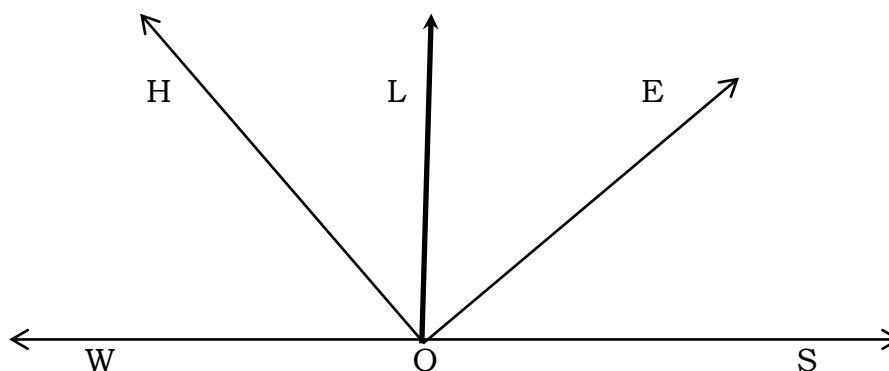


1. $\overleftrightarrow{RS}$ and $\overleftrightarrow{ET}$ _____
2. $\overleftrightarrow{ET}$ and $\overleftrightarrow{OX}$ _____
3. $\overleftrightarrow{RS}$ and $\overleftrightarrow{ST}$ _____
4. $\overleftrightarrow{RE}$ and $\overleftrightarrow{ST}$ _____
5. $\overleftrightarrow{OX}$ and $\overleftrightarrow{ET}$ _____

C. Fill in the blanks

1. It is a figure formed by two rays, which sides sharing a common endpoint called a vertex. This is called a/an _____.
2. An angle that measures less than 90° is called _____.
3. An angle that measures exactly 90° is called _____.
4. An angle that measures greater than 90° but less than 180° is called _____.
5. An angle that measures exactly 180° is called _____.
6. An angle that measures greater than 180° is called _____.
7. A device used to measure an angle is called _____.
8. The unit of measurement for angle is called _____.

D. Using a protractor, measure the angles and determine the types of angles.



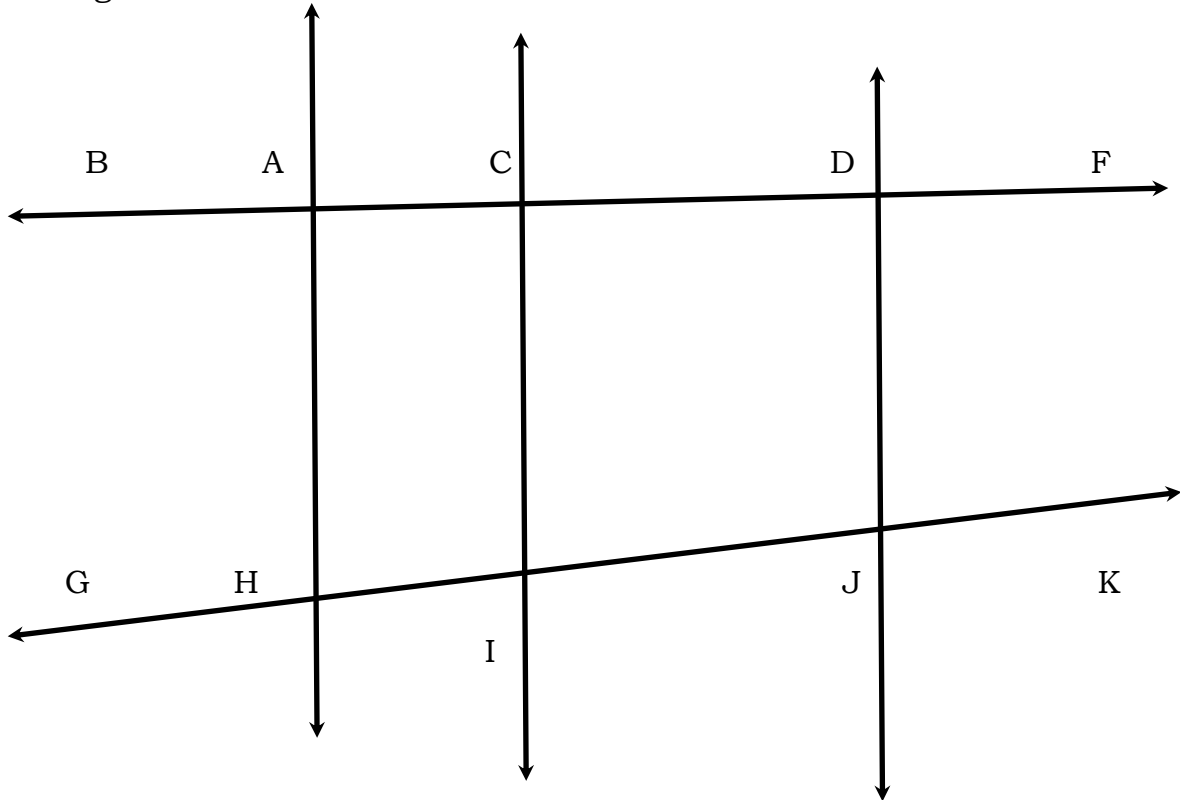
Name of Angle	Measurement	Types of Angles
1. $\angle EOS$		
2. $\angle LOE$		
3. $\angle HOL$		
4. $\angle WOH$		
5. $\angle WOS$		



What Have You Learned?

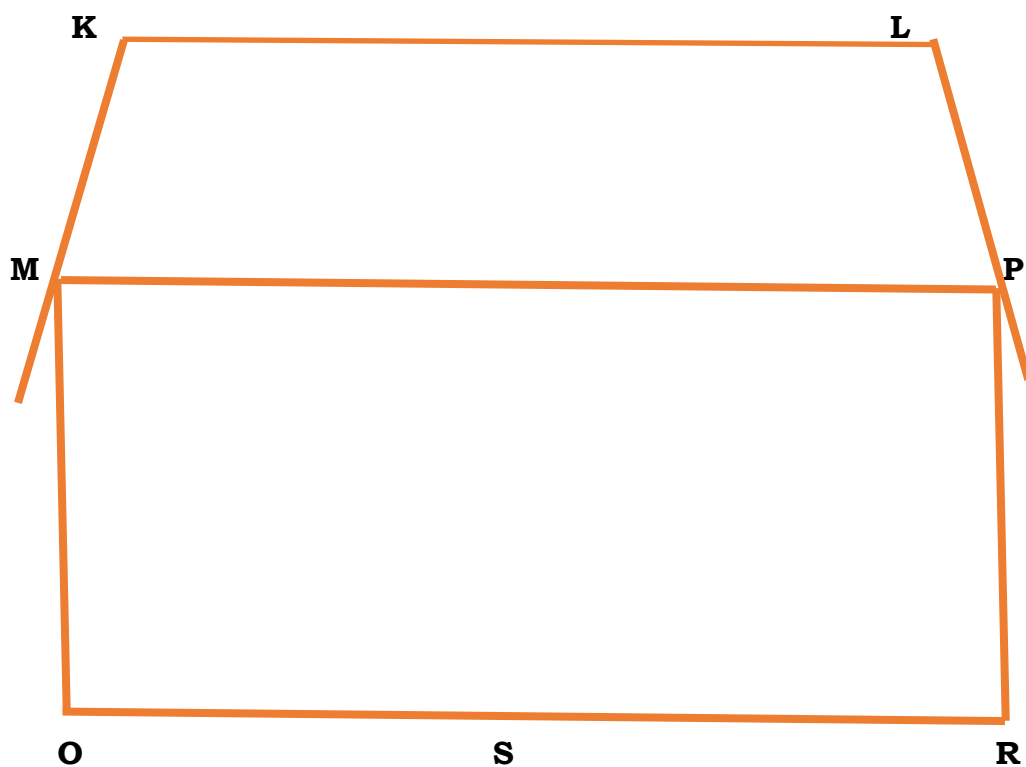
Direction: Write the letter of the correct answer.

A. Identify each pair of lines as **parallel**, **intersecting**, or **perpendicular** in the figure below.



- | | | | |
|---|-----------------|-------------|------------------|
| 1. $\overleftrightarrow{DJ}$ and $\overleftrightarrow{GK}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 2. $\overleftrightarrow{AH}$ and $\overleftrightarrow{CI}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 3. $\overleftrightarrow{BF}$ and $\overleftrightarrow{DJ}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 4. $\overleftrightarrow{CI}$ and $\overleftrightarrow{GK}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 5. $\overleftrightarrow{AD}$ and $\overleftrightarrow{AH}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 6. $\overleftrightarrow{DJ}$ and $\overleftrightarrow{CF}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 7. $\overleftrightarrow{AH}$ and $\overleftrightarrow{GK}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 8. $\overleftrightarrow{AH}$ and $\overleftrightarrow{DJ}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 9. $\overleftrightarrow{CI}$ and $\overleftrightarrow{HK}$ | A. Intersecting | B. Parallel | C. Perpendicular |
| 10. $\overleftrightarrow{AD}$ and $\overleftrightarrow{DJ}$ | A. intersecting | B. Parallel | C. Perpendicular |

B. Using a protractor, measure the angles and determine the types of angles.



Name of Angle	Measurement	Types of Angles
1. $\angle MOR$		
2. $\angle KMP$		
3. $\angle KLP$		
4. $\angle LPM$		
5. $\angle OSR$		



Answer Key

Let's See What You Already Know

A. 1. B

2. A

3. C

4. B

B. 1. 80° , Acute $\angle$

2. 100° , Obtuse $\angle$

3. 90° , Right $\angle$

4. 80° , Acute $\angle$

5. 100° , Obtuse $\angle$

Activity 1

1. Intersecting Lines

2. Parallel Line

3. Perpendicular Lines

4. Intersecting Lines

5. Perpendicular Lines

6. Parallel Lines

7. Perpendicular Lines

8. Intersecting Lines

9. Perpendicular Lines

Activity 2

1. 150° , Obtuse $\angle$
2. 140° , Obtuse $\angle$
3. 40° , Acute $\angle$
4. 180° , Straight $\angle$
5. 90° , Right $\angle$

Let's See What You Have Learned

- | | |
|---------|-------|
| A. 1. A | 6. A |
| 2. B | 7. B |
| 3. C | 8. A |
| 4. A | 9. B |
| 5. C | 10. C |

- B. 1. Acute $\angle$, Right $\angle$, Reflex $\angle$

2. Right $\angle$
3. Acute $\angle$
4. Acute $\angle$, Right $\angle$ & Obtuse $\angle$
5. Acute $\angle$, Right $\angle$ & Obtuse $\angle$

Let's Remember and Review

- A. 1. Line

2. Intersecting Lines
3. Parallel Lines
4. Perpendicular Lines

- B. 1. Parallel Lines
2. Intersecting Lines
 3. Perpendicular Lines
 4. Parallel Lines
 5. Intersecting Lines

- D. 1. 45° , Acute $\angle$

2. 90° , Right $\angle$
3. 40° , Acute $\angle$
4. 50° , Acute $\angle$
5. 180° , Straight $\angle$

6. Reflex $\angle$
7. Protractor
8. Degrees

- C. 1. Angle

2. Acute $\angle$
3. Right $\angle$
4. Obtuse $\angle$
5. Straight $\angle$
6. Reflex $\angle$
7. Protractor
8. Degrees

What Have You Learned?

- A. 1. A
 - 2. B
 - 3. C
 - 4. A
 - 5. C
 - 6. C
 - 7. A
 - 8. B
 - 9. A
 - 10. C
-
- B. 1. 90° , Right $\angle$
 - 2. 85° , Acute $\angle$
 - 3. 95° , Obtuse $\angle$
 - 4. 85° , Acute $\angle$
 - 5. 180° , Straight $\angle$

Glossary

Angle - is formed by two rays, called the sides of the angle, sharing a common endpoint called a **vertex**.

Acute angle - is an angle whose is less than 90°

Degree $^\circ$ - is the unit of measurement for an angle.

Intersecting lines - are lines that meet / intersect each other.

Line - has arrows at both ends to show that it goes on and on toward both directions. It can be named by using two capital letters.

Obtuse angle - is an angle that measures greater than 90° but less than 180°

Protractor - is a device used to measure an angle.

Parallel lines - are lines that do not intersect each other.

Perpendicular lines - are lines that intersect each other and form a right angle.

Reflex angle - is an angle that measures greater than 180° .

Right angle - is an angle that measures exactly 90° .

Straight angle - is an angle whose measure is exactly 180° .

References

- “Pairs of Lines (examples, solutions, videos) 2019.” [online] Retrieved from <https://www.onlinemathlearning.com> (Accessed 20 Nov. 2019]
- “Angle Sort using Real Life Pictures: Acute, Right, Obtuse, and Straight.” [online] Retrieved from <https://www.teacherspayteachers.com>- [Accessed 21 Nov. 2019].

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