Lesson 4.1.1: Exterior Angle Inequality Theorem

Exterior Angle: the angle between a side of a polygon and an extended adjacent side

Remote Interior Angle: an interior angle that is not

adjacent to the exterior angle

Exterior Angle Inequality Theorem: The measure of an exterior angle of a triangle is greater than the measure of either remote interior angle.

Practice Exercises 4.1.1

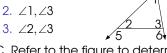
A. Determine the remote interior angles in relation to the aiven exterior anale.

1. $\angle 4$



B. Determine the exterior angle in relation to each pair of remote interior anales.

1. ∠1,∠2



C. Refer to the figure to determine whether each statement is True or False.

1. $m\angle E > m\angle A$

6. $m \angle I < m \angle H$

2. $m \angle B < m \angle E$

7. $m\angle D > m\angle H$

3. $m\angle F > m\angle H$

8. $m\angle C > m\angle D$ 9. $m\angle G > m\angle A$

4. $m\angle C > m\angle F$ 5. $m\angle G > m\angle I$

10. $m\angle B > m\angle G$

Lesson 4.1.1: Exterior Angle Inequality Theorem

Exterior Angle: the angle between a side of a polygon and

Remote Interior Angle: an interior angle that is not

Exterior Angle Inequality Theorem: The measure of an exterior angle of a triangle is greater than the measure of

A. Determine the remote interior angles in relation to the

B. Determine the exterior angle in relation to each pair of

D. Refer to the figure to list all the angles that satisfy the

stated condition.

1. measures greater than $m\angle A$

2. measures less than m/B

3. measures greater than $m \angle C$

4. measures less than m/I

5. measures greater than $m\angle G$

6. measures less than $m\angle E$

7. measures greater than $m \angle F$

8. measures less than $m\angle D$

9. measures greater than $m\angle H$

10. measures less than $m\angle G$

an extended adjacent side

either remote interior angle.

Practice Exercises 4.1.1

given exterior angle.

remote interior angles.

1. ∠4

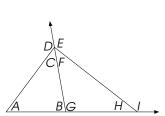
∠5

1. ∠1,∠2

2. ∠1,∠3

3. ∠2,∠3

adjacent to the exterior angle



E. Refer to the figure to determine the inequality symbol that makes the statement correct.

m∠A__m∠C

6. m∠B__m∠F

m∠E_m∠C 7. $m\angle A$ $m\angle E$

8. *m*∠*D*_*m*∠*A* m∠G__m∠A

 m∠F__m∠D m∠D_m∠F

5. *m*∠*C*_*m*∠*G* 10. *m*∠*C*_*m*∠*E*

Activity 4.1.1

A. Refer to the figure to determine whether each statement is True or False.

6. $m \angle 7 < m \angle 9$ 1. $m\angle 4 > m\angle 1$

 $2. m \angle 5 < m \angle 8$ 7. $m \angle 9 > m \angle 1$

3. $m\angle 9 > m\angle 6$ 8. $m\angle 8 > m\angle 3$

4. $m\angle 2 > m\angle 4$ 9. $m\angle 6 > m\angle 1$

5. $m \angle 8 > m \angle 5$ 10. $m\angle 2 > m\angle 4$

B. Refer to the figure to list all the angles that satisfy the stated condition.

measures greater than $m\angle 7$

2. measures less than $m\angle 7$

3. measures greater than $m\angle 6$

4. measures less than $m\angle 2$

5. measures greater than $m\angle 2$

6. measures less than $m \angle 5$

7. measures greater than $m \angle 1$

8. measures less than $m\angle 4$

9. measures greater than $m \angle 8$

10. measures less than m/9

C. Refer to the figure to determine the inequality symbol that makes the statement correct.

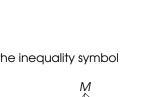
1. *m*∠1 *m*∠3 6. m∠2 m∠6

2. m∠5 m∠3 7. m∠1 m∠5

3. $m\angle 7$ $m\angle 1$ 8. m∠4 m∠1

4. m/4 m/6 9. m∠6_m∠4 5. m∠3 m∠7

10. *m*∠3_*m*∠5



/B ClF

E. Refer to the figure to determine the inequality symbol

that makes the statement correct m∠A__m∠C 6. m∠B__m∠F

 m∠E__m∠C 7. $m\angle A$ $m\angle E$

 m∠G__m∠A 8. $m\angle D$ $m\angle A$

4. *m*∠*D*_*m*∠*F* 9. m∠F__m∠D

5, $m\angle C$ $m\angle G$

10. $m\angle C_m\angle E$

Activity 4.1.1

A. Refer to the figure to determine whether each statement is True or False.

1. $m\angle 4 > m\angle 1$

6. $m \angle 7 < m \angle 9$

2. $m \angle 5 < m \angle 8$

7. $m \angle 9 > m \angle 1$

3. $m\angle 9 > m\angle 6$

8. $m\angle 8 > m\angle 3$

4. $m\angle 2 > m\angle 4$

9. $m\angle 6 > m\angle 1$

5. $m\angle 8 > m\angle 5$

10. $m\angle 2 > m\angle 4$ B. Refer to the figure to list all the angles that satisfy the

stated condition.

1. measures greater than $m\angle 7$

2. measures less than m/7

3. measures greater than $m \angle 6$

4. measures less than $m \angle 2$

5. measures greater than $m\angle 2$

6. measures less than $m \angle 5$

7. measures greater than $m \angle 1$

8. measures less than $m \angle 4$

9. measures greater than $m \angle 8$

10. measures less than $m \angle 9$

C. Refer to the figure to determine the inequality symbol that makes the statement correct.

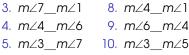
m∠1_m∠3

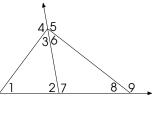
6. m∠2_m∠6

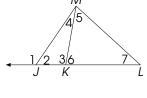
2. m∠5_m∠3

7. m∠1 m∠5

5. $m \angle 3$ $m \angle 7$







C. Refer to the figure to determine whether each statement is True or False. 1. $m\angle E > m\angle A$ 6. m/l < m/H

2. $m \angle B < m \angle E$

7. $m\angle D > m\angle H$

3. $m\angle F > m\angle H$ 4. $m\angle C > m\angle F$ 8. $m\angle C > m\angle D$ 9. $m\angle G > m\angle A$

DE

10. $m\angle B > m\angle G$ 5. $m\angle G > m\angle I$ D. Refer to the figure to list all the angles that satisfy the

stated condition measures greater than $m\angle A$

3. measures greater than $m\angle C$

4. measures less than *m∠I*

2. measures less than $m \angle B$

5. measures greater than $m\angle G$ 6. measures less than $m\angle E$

7. measures greater than $m \angle F$

8. measures less than $m\angle D$ 9. measures greater than $m \angle H$

10. measures less than $m\angle G$