Name _____ Date _____ Pd ____

7.3 Proving a Quadrilateral is a Parallelogram DAY TWO CYU

☑ *Use when you get it right all by yourself*

S *Use when you did it all by yourself, but made a silly mistake*

H *Use when you could do it alone with a little help from teacher or peer*

***G*** *Use when you completed the problem in a group*

X *Use when a question was attempted but wrong (get help)*

***N*** *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Applying properties	1 - 3	4 - 6	7 - 10
Graphing coordinates	4 - 5		
Finding slope & distance formula	4 - 5		
Classifying quadrilaterals	11 - 13		

Find the values of x and y that make the quadrilateral a parallelogram.

1.

66° 114°

$x°$ $y°$

2.

$4x + 6$

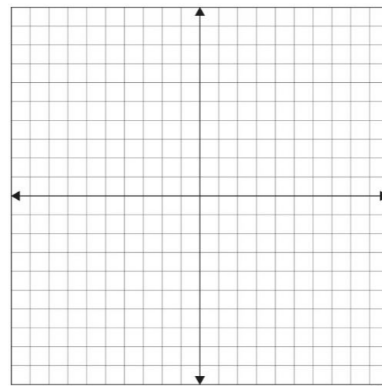$4y - 3$ $3y + 1$

$7x - 3$

3.

$6x$ $3x + 2$
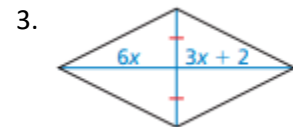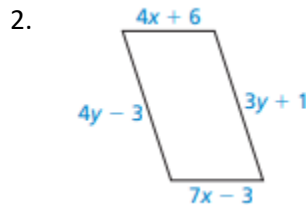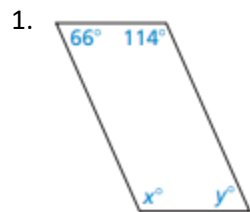
Graph the quadrilateral with the given vertices in a coordinate plane. Then show that the quadrilateral is a parallelogram.

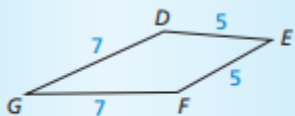4. A(0, 1), B(4, 4), C(12, 4), & D(8, 1)
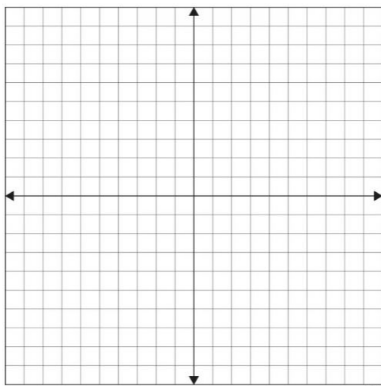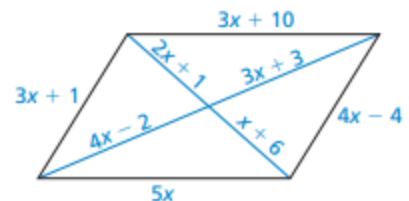
5. J(- 2, 3), K(- 5, 7), L(3, 6), & M(6, 2)

6. Describe and correct the error in identifying a parallelogram.

✗

D   5   E

7

G   7   F

5

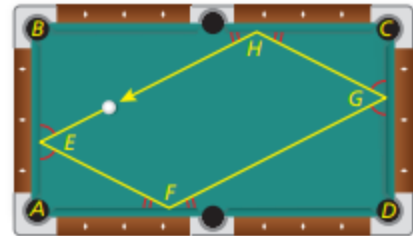*DEFG is a parallelogram by the Parallelogram Opposite Sides Converse (Theorem 7.7).*

7. **MATHEMATICAL CONNECTIONS** What value of x makes the quadrilateral a parallelogram? Explain how you found your answer.

$3x + 10$

$2x + 7$ $3x + 3$

$3x + 1$

$4x - 2$ $x + 6$

$4x - 4$

$5x$

8. **MAKING AN ARGUMENT** Your brother says to show that quadrilateral QRST is a parallelogram, you must show that $\overline{QR}//\overline{TS}$ & $\overline{QT}//\overline{RS}$. Your sister says that you must show that $\overline{QR} \cong \overline{TS}$ & $\overline{QT} \cong \overline{RS}$. Who is correct? Explain your reasoning.
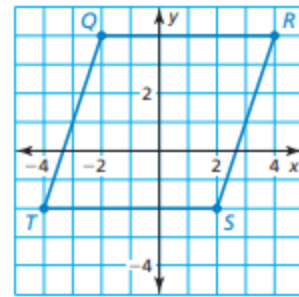

9. **MODELING WITH MATHEMATICS** You shoot a pool ball, and it rolls back to where it started, as shown in the diagram. The ball bounces off each wall at the same angle at which it hits the wall.

    a) The ball hits the first wall at an angle of 63°. So m∠AEF = m∠BEH = 63°. What is the m∠AFE? Explain your reasoning.

    b) Explain why m∠FGD = 63°.

    c) What is the m∠GHC? m∠EHB?

    d) Is quadrilateral EFGH a parallelogram? Explain your reasoning.

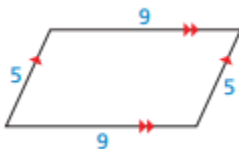10. **MODELING WITH MATHEMATICS** In the diagram of the parking lot shown, m ∠JKL = 60°, JK = LM = 21 feet, and KL = JM = 9 feet.
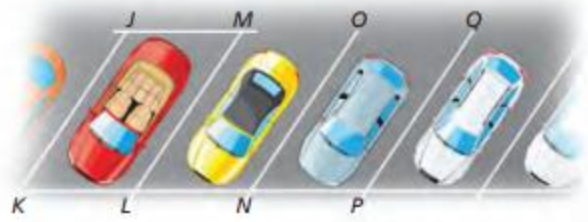
    a) Explain how to show that parking space JKLM is a parallelogram.

    b) Find m∠ JML, m∠KJM, & m∠KLM.
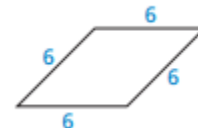
Classify the quadrilateral.

11.

12.

13.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!