Geometry: Module 10 Lesson 5

Bellwork:
Explain: 1) Using both slope and distance formula to classify quadrilaterals. Be able to explain. 2) Area and perimeter of quadrilaterals
Practice: Worksheet (coordinate Proof)
           Worksheet (Area and Perimeter)
Explain 2: Using Easel.ly to create an infographic
Cheatsheet
Practice: Creating Infographic
Presentations:
Closing:
What we can do with slope:
- Find out if lines are parallel.
- Find out if lines are perpendicular.
- We can identify parallelograms, rectangles, rhombi, squares, and trapezoids with slope.
- We cannot determine if a shape is a kite, or isosceles trapezoid using slope alone.

Suggestion for Coordinate Proofs:
1) Find the slopes of all 4 sides (be sure to write down the slopes first)
2) If more info is needed, use distance to find (Pythagorean Theorem)
3) If more info is needed, repeat steps 1 and 2 with the diagonals
Use distance formula to determine what kind of quadrilaterals the following 4 points make. List all that apply.

**Ex 1)**

A (-5, 7)
B (5, 2)
C (2, -3)
D (-8, 2)

\[
AD: \sqrt{(-5 - 5)^2 + (7 - 2)^2} = \sqrt{10^2 + 5^2} = \sqrt{125}
\]

\[
BC: \sqrt{(5 - 2)^2 + (2 - (-3))^2} = \sqrt{3^2 + 5^2} = \sqrt{34}
\]

\[
AB: \sqrt{(-5 - 5)^2 + (7 - 2)^2} = \sqrt{10^2 + 5^2} = \sqrt{125}
\]

\[
DC: \sqrt{(-8 - 2)^2 + (2 - (-3))^2} = \sqrt{(-10)^2 + 5^2} = \sqrt{100 + 25} = \sqrt{125}
\]
Use distance formula to determine what kind of quadrilaterals the following 4 points make. List all that apply.

Ex 2)
A (4, 4)
B (1, -5)
C (-8, -2)
D (-5, 7)
Use distance formula to determine what kind of quadrilaterals the following 4 points make. List all that apply.

Ex 3)
A (-8, 3)
B (-2, 3)
C (-8, -3)
D (-1, -4)
10.5
Area And
Perimeter of
Quads

Triangle:
\[ A = \frac{1}{2}bh \]

Trapezoid:
\[ A = \frac{1}{2}(b_1 + b_2)h \]

Rhombus:
\[ A = \frac{1}{2}d_1 \cdot d_2 \]

Kite:
\[ A = \frac{1}{2}d_1 \cdot d_2 \]
10.5
Area And Perimeter of Quads

Rectangle (square):

\[ A = bh \]

Parallelogram:

\[ A = bh \]