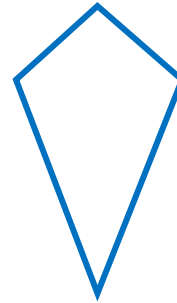


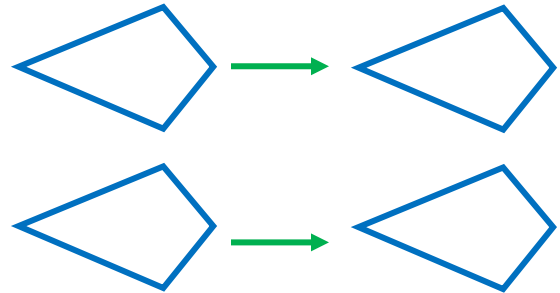
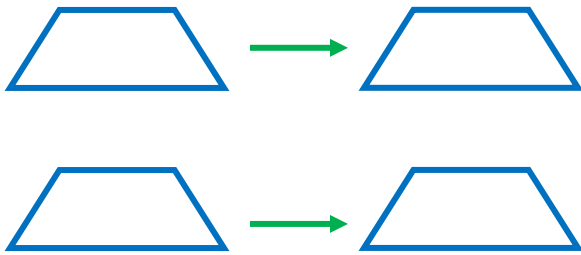
**Core Concept**

**Trapezoids, Isosceles Trapezoids and Kites**



A quadrilateral is a \_\_\_\_\_ if it has exactly one pair of \_\_\_\_\_ sides. The parallel sides are called the \_\_\_\_\_ and the other sides are called the legs. If the bases are \_\_\_\_\_ then it is an \_\_\_\_\_.

A quadrilateral is a \_\_\_\_\_ if it has two pair of \_\_\_\_\_, but opposites sides are not congruent.

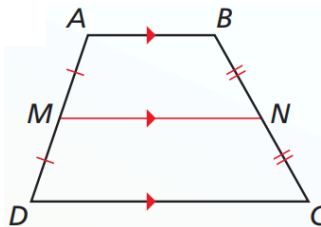


**Theorem**

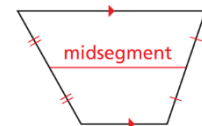
**Trapezoid Midsegment Theorem**

If  $\overline{MN}$  is a midsegment of trapezoid  $ABCD$  then

$$MN =$$

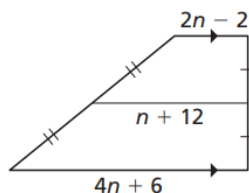


**Definition:** The **midsegment** of a trapezoid is a segment that connects the midpoints of its legs.

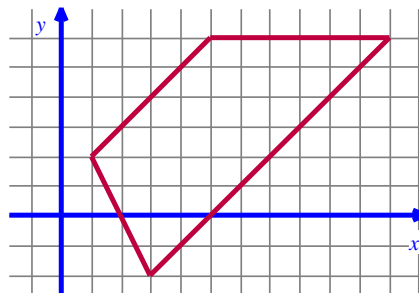


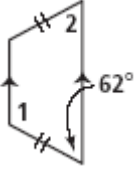
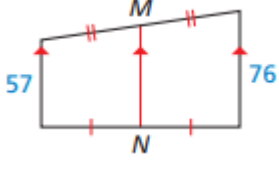
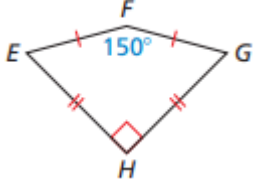
Examples:

1. Find the value of  $n$ .

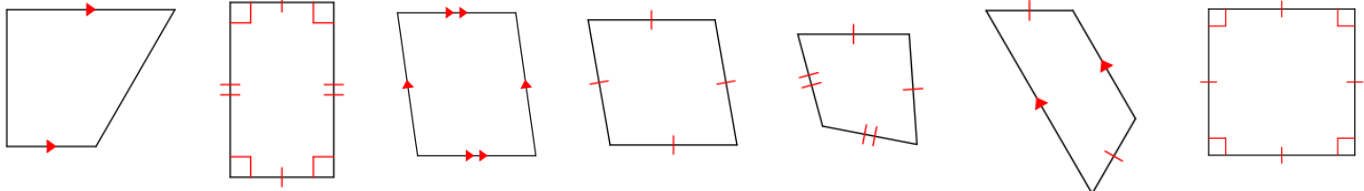


2. Draw the midsegment and find its length using the distance formula.



<p>3. Find <math>m\angle 1</math> and <math>m\angle 2</math>.</p> 	<p>4. Find <math>MN</math> (the length of <math>\overline{MN}</math>).</p> 	<p>5. Find <math>m\angle E</math>.</p> 
---	--	--

6. Name each quadrilateral. Choose one unique name for each.



Algebra Review

<p>Example 1:</p> $\frac{x^3}{x^4}$ $\frac{xxx}{xxxx}$ $\frac{1}{x}$	<p>Example 2:</p> $\frac{12x^3y^4}{4x^2y^6}$ $\frac{4 \cdot 3 \cdot xxx \ yyyy}{4xx \ yyyyyy}$ $\frac{3 \cdot x}{yy} = \frac{3x}{y^2}$
--	--

You try...

1. $\frac{n^3}{n^{12}}$	2. $\frac{n^9}{n^5}$	3. $\frac{2n^4}{n}$	4. $\frac{6x^2}{3x^5}$
5. $\frac{x^3y^4}{x^2y}$	6. $\frac{8x^6y^2}{2x^3y^2}$	7. $\frac{8xy^2}{12x^3y^5}$	8. $\frac{20x^3y^6}{5x^3y^{10}}$
9. $\frac{3a^5b^2}{9a^2b^5}$	10. $\frac{12m^{20}n^8}{16m^3n^{20}}$	11. $\frac{(2x^2y)^3}{x^4y^8}$	12. $\frac{(3x^3)^2}{12x^8 \cdot 2y^2}$

Challenge: A)  $\frac{8x^{-2}y}{24x^5y^3}$

B)  $\frac{a^{-7}b^{-4}}{7a^2b}$

C)  $\frac{(2x^3y^{-4})(3xy^3)}{18x^{-6}}$