

## Reviewing what we know for 6.6 & 6.7 Warm Up

Key

### Basic Review

1.  $M(-4, 5)$ ,  $N(2, 2)$ ,  $P(0, -2)$ ,  $Q(-6, 1)$

What is the most specific name of this figure?

2.

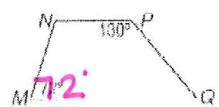
Quadrilateral  $MNPQ$  has vertices  $M(4, 0)$ ,  $N(0, 6)$ ,  $P(-4, 0)$  and  $Q(0, -6)$ . Determine whether  $MNPQ$  is a trapezoid, a parallelogram, a square, a rhombus, or a quadrilateral. Choose the most specific term. Explain.

### 6.6 Review Warm Up

1. Find  $\angle N$  and  $\angle Q$ .

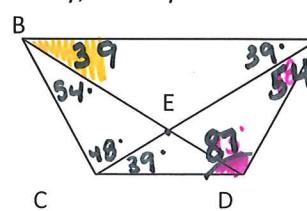
$$\angle N = 108^\circ$$

$$\angle Q = 50^\circ$$



3. Use isosceles trapezoid ABCD from #2. If  $m\angle ACD = 39^\circ$ , and  $\angle BCA = 48^\circ$ , find  $m\angle ABD$ .

$$\triangle CEB \cong \triangle DEA$$

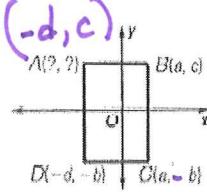


### 6.7 Review

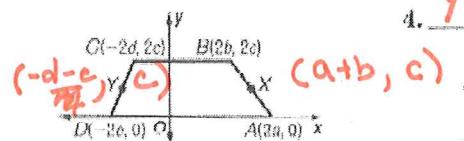
1.  $ABCD$  is a rhombus with  $A(a, 0)$ ,  $B(0, b)$ , and  $D(0, -b)$ . Find the possible coordinates of  $C$ .

2.  $ABCD$  is a square with  $A(a, 0)$ ,  $B(0, a)$ , and  $C(-a, 0)$ . Find the possible coordinates of  $D$ .

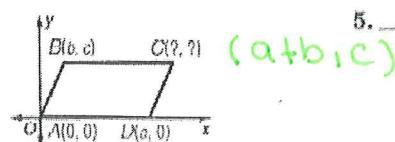
3. Given rectangle  $ABCD$ , name the coordinates of  $A$ .



4. Name the coordinates of the endpoints of the median of trapezoid  $ABCD$ .

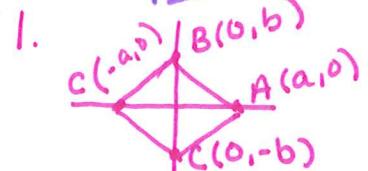


5. Name the missing coordinates of  $C$  in parallelogram  $ABCD$ .



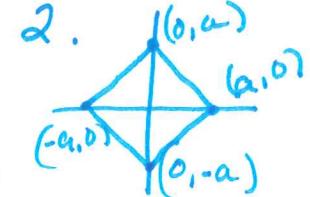
2. If  $ABCD$  is an isosceles trapezoid with  $AC = 5y$ ,  $BE = 4y-1$  and  $DE = 2y-1$ . Find  $y$ .

$$\begin{aligned} AC &= BD \\ AC &= BE + DE \\ 5y &= 4y-1 + 2y-1 \\ 5y &= 6y-2 \\ -1y &= -2 \\ y &= 2 \end{aligned}$$



1.  $C(-a, 0)$   
2.  $D(0, -a)$

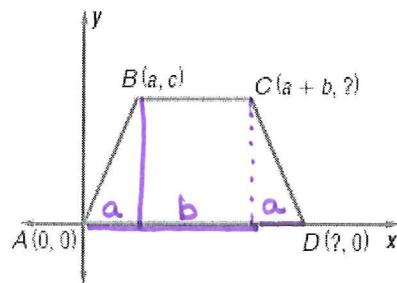
3.  $A(-d, c)$



4.  $X(a+b, c)$   
 $Y(-d-e, c)$

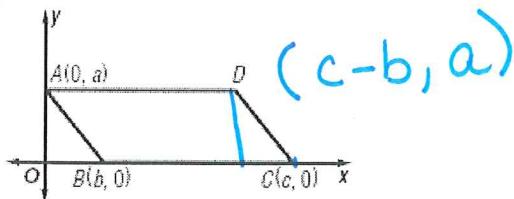
5.  $C(a+b, c)$

Ex6 Name the missing coordinates for the isosceles trapezoid.



$$\begin{aligned}C & (a+b, c) \\D & (2a+b, 0)\end{aligned}$$

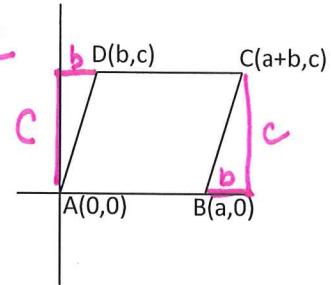
Ex7 In the figure, ABCD is a parallelogram. What are the coordinates of point D?



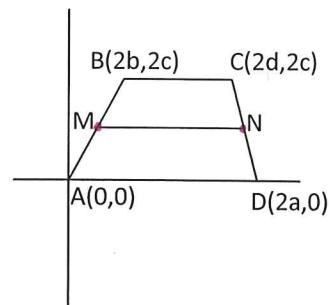
Ex8 Write a coordinate proof to show that opposite sides of a parallelogram are congruent.

$$\begin{aligned}AD &= \sqrt{b^2 + c^2} \\AB &= a \\DC &= a \quad \gtrsim \quad \gtrsim \\BC &= \sqrt{b^2 + c^2}\end{aligned}$$

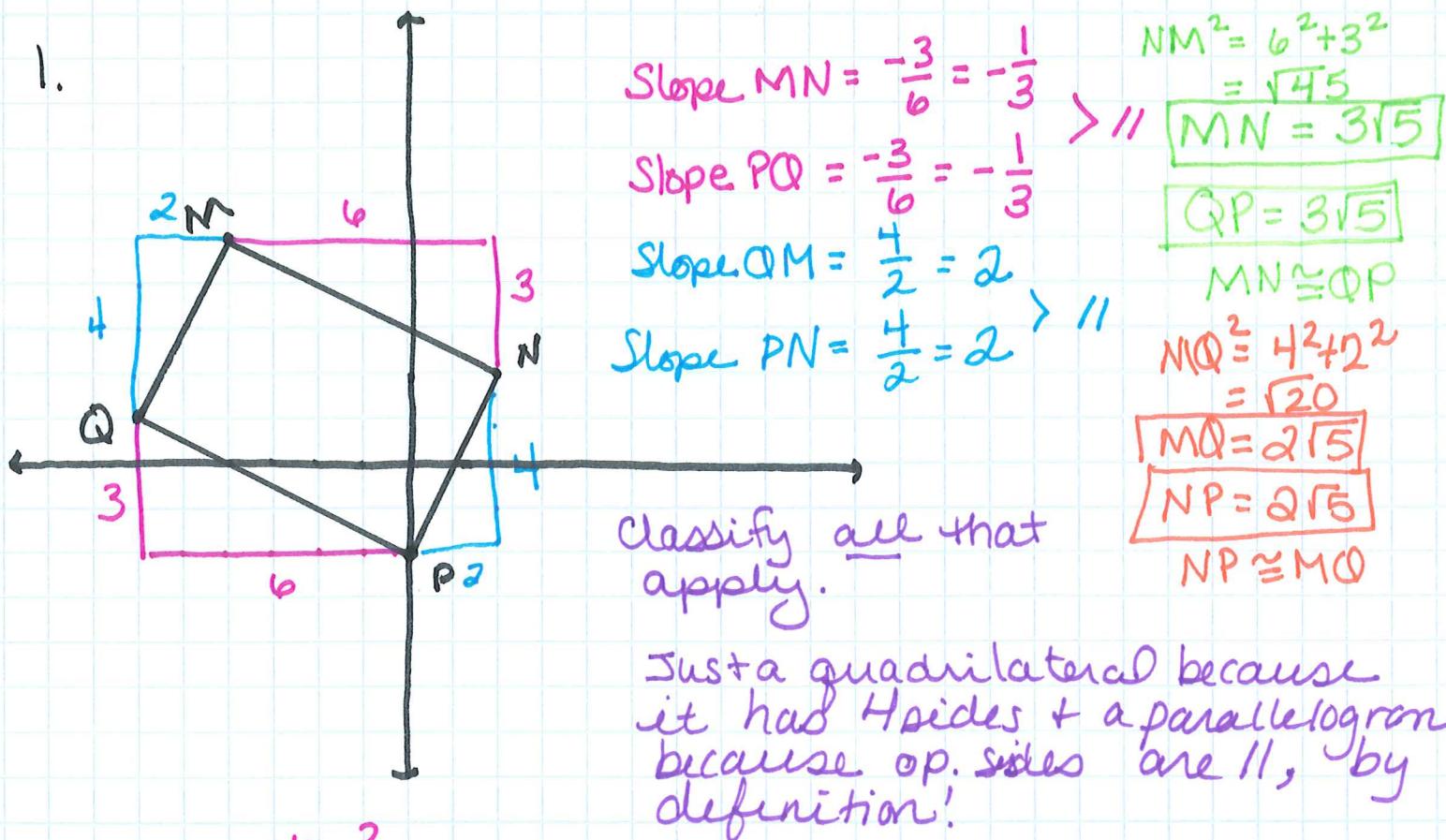
$AD \cong BC$  and  $AB \cong DC$   
 $\therefore$  op. sides of a  
Parallelogram are  $\cong$



Ex9 Write a coordinate proof to find the length of the median?



1.

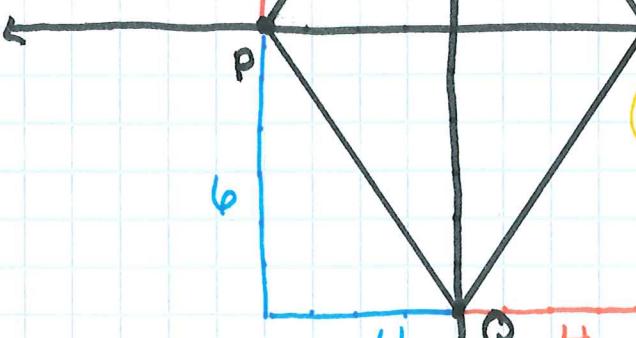


2. Slope  $PN = \frac{6}{4} = \frac{3}{2}$

$PN \neq MO$   
 $PQ \parallel NM$

Slope  $PQ = -\frac{3}{2}$

Slope  $MQ = \frac{3}{2}$   
 Slope  $NM = -\frac{3}{2}$



$NM^2 = 6^2 + 4^2 = 36 + 16 = 52$   
 $NM = 2\sqrt{13}$

$NP^2 = 6^2 + 4^2 = 36 + 16 = 52$   
 $NP = 2\sqrt{13}$

$NP^2 = 6^2 + 4^2$

$|NP = 2\sqrt{13}|$

$MQ^2 = 6^2 + 4^2 = 36 + 16 = 52$   
 $MQ = 2\sqrt{13}$

$PQ^2 = 6^2 + 4^2$

$|PQ = 2\sqrt{13}|$

This is a parallelogram because op sides are  $\parallel$  by definition and a Rhombus because all 4 sides  $\cong$ .

Find the length of the median.

$\text{Med} = \frac{1}{2}(13 + 7)$

Median = 10

