

1.) Identify whether the equations below are parallel, perpendicular or neither:

$$\begin{array}{r|l}
 8x - 2y = 3 & \\
 \hline
 -8x & -8x \\
 \hline
 -2y & = -8x + 3 \\
 \hline
 -2 & \quad -2 \quad -2 \\
 \hline
 y & = 4x - \frac{3}{2}
 \end{array}$$

$$\begin{array}{r|l}
 x + 4y = -1 & \\
 \hline
 -x & -x \\
 \hline
 4y & = -x - 1 \\
 \hline
 4 & \quad 4 \quad 4 \\
 \hline
 y & = -\frac{1}{4}x - \frac{1}{4}
 \end{array}$$

2.) Write the equation of a line perpendicular to  $y = -x + 3$  and passes through the point  $(2, -1)$ .

$x$   $y$

Opp. Recip. Slopes!

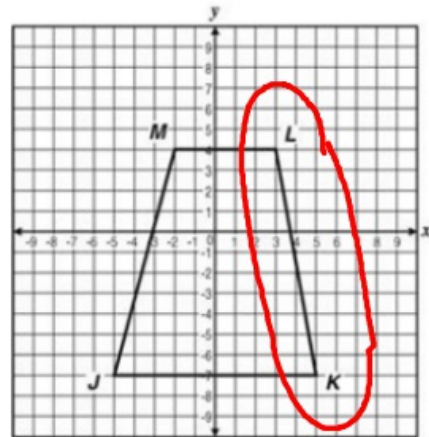
~~$m = -1$~~   
 ~~$m = 1$~~

$$\begin{array}{l}
 y = mx + b \\
 -1 = 1(2) + b \\
 -1 = 2 + b \\
 \frac{-1}{2} \quad \frac{-2}{2} \\
 \hline
 -3 = b
 \end{array}$$

$y = x - 3$

8.) Trapezoid JKLM is shown below. The coordinates of the trapezoid are as follows:  $J(-5, -7)$ ,  $K(5, -7)$ ,  $L(3, 4)$  and  $M(-2, 4)$ . What is the equation of the line containing  $\overline{KL}$ ?

- Step 1: Find the slope between  $\overline{KL}$ .  $m = \frac{-11}{2}$
- Step 2: Select the point K or L.  $(5, -7) \rightarrow K$
- Step 3: Plug the  $x$  and  $y$  coordinates from the point you selected and the slope (calculated in step 1) into  $y = mx + b$ .
- Step 4: Solve for the  $y$ -intercept,  $b$ .
- Step 5: Use the slope and  $y$ -intercept to write the equation of the line.



$$y = mx + b$$

$$-7 = \frac{-11}{2}(5) + b$$

$$-7 = -\frac{55}{2} + b$$

$$\frac{+55}{2} + \frac{55}{2} = \frac{+55}{2} + b$$

$$\frac{41}{2} = b$$

$$y = -\frac{11}{2}x + \frac{41}{2}$$

$\frac{-11}{2} \cdot \frac{5}{1} = -\frac{55}{2}$

9.) The cheerleaders made spirit buttons and sold them for homecoming. The table shows the amount of profit they made for different numbers of buttons sold. Which equation represents the relationship?

Spirit Button Profits

Number Sold (x)	Total Profit (y)
50	\$0
100	\$45
150	\$90
200	\$135

$+150$  }  $+45$   
 $+150$  }  $+45$   
 $+150$  }  $+45$

$D. y = 0.9x - 45$

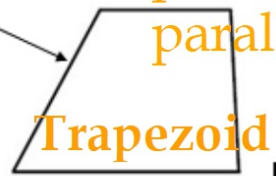
$$m = \frac{\Delta y}{\Delta x} = \frac{45}{50}$$

$$m = 0.9$$

four sided polygon



exactly one pair of parallel sides



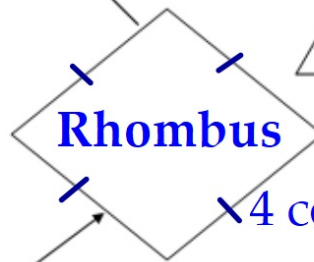
2 pair of opposite parallel and congruent sides



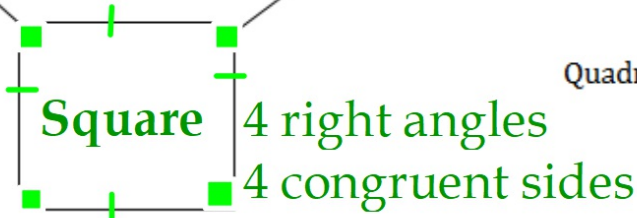
one pair of congruent sides



4 right angles



4 congruent sides



4 right angles

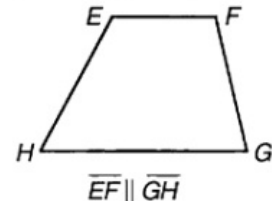
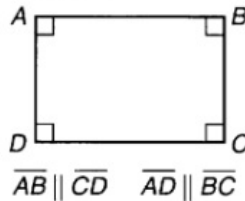
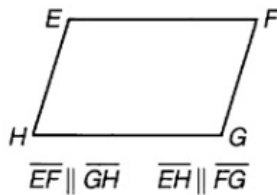
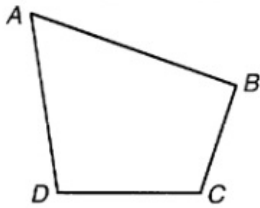
4 congruent sides

Quadrilateral Flow Chart

# Why Do Airlines Think They Show the Best Movies?



Under each figure, circle the number-letter pair next to each word that correctly names the figure. Write the letter in the matching numbered box at the bottom of the page.

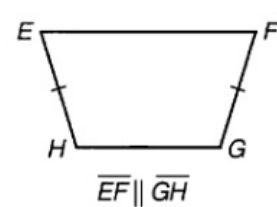
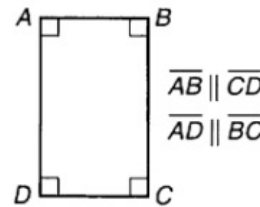
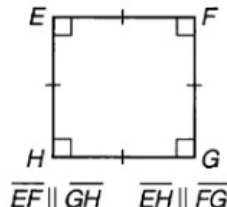
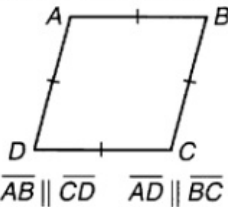


- 11 • F parallelogram
- 26 • H polygon
- 14 • D rectangle
- 32 • C rhombus
- 8 • E quadrilateral

- 2 • W rectangle
- 23 • T trapezoid
- 19 • U parallelogram
- 30 • I quadrilateral
- 4 • M square

- 34 • E polygon
- 6 • P square
- 11 • R parallelogram
- 17 • G rhombus
- 2 • O rectangle

- 27 • U parallelogram
- 14 • A quadrilateral
- 23 • N trapezoid
- 1 • T isosceles trapezoid

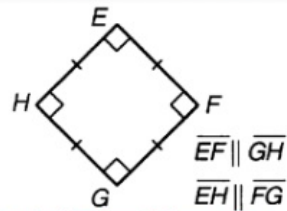
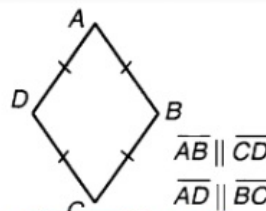
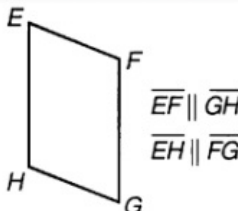
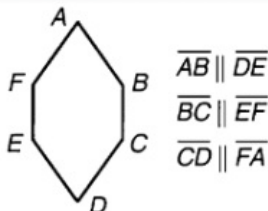


- 22 • A square
- 10 • K rectangle
- 6 • Y rhombus
- 30 • L trapezoid
- 32 • D parallelogram

- 27 • E square
- 4 • O parallelogram
- 31 • R trapezoid
- 22 • I rectangle
- 17 • S rhombus

- 25 • T quadrilateral
- 10 • E parallelogram
- 1 • N rectangle
- 15 • B square
- 5 • L trapezoid

- 20 • F rhombus
- 33 • R parallelogram
- 31 • D trapezoid
- 15 • L isosceles trapezoid



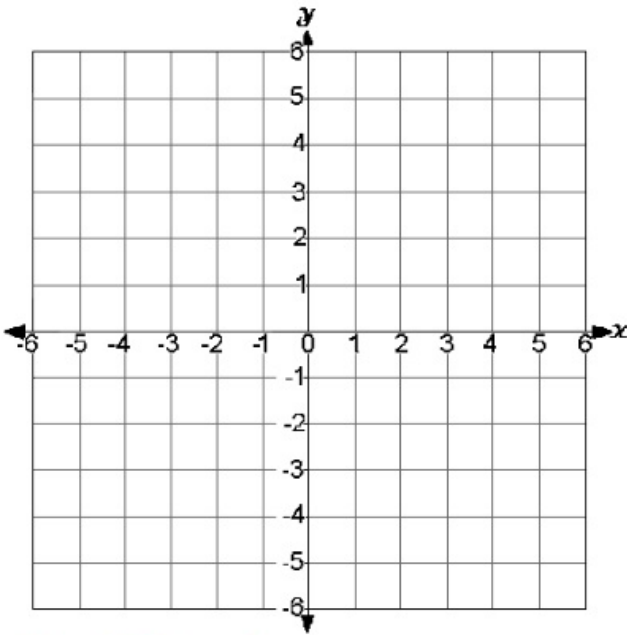
- 26 • X parallelogram
- 34 • J quadrilateral
- 13 • P rectangle
- 29 • S trapezoid
- 5 • D polygon

- 3 • R rectangle
- 20 • T parallelogram
- 16 • D rhombus
- 21 • H trapezoid
- 9 • V polygon

- 33 • L rhombus
- 7 • S square
- 28 • N rectangle
- 13 • W quadrilateral
- 18 • P trapezoid

- 3 • B rectangle
- 18 • O parallelogram
- 29 • M rhombus
- 24 • S trapezoid
- 16 • K square

H (-5,0), E(-3,2), A(3,2), T (5,0)



Find the slopes:

HE =

EA =

AT =

HT =

Find the distances:

HE =

EA =

AT =

HT =

Quadrilateral HEAT is an isosceles trapezoid because sides HE and AT are congruent and sides EA and HT are parallel.

