

# Proving Lines Parallel

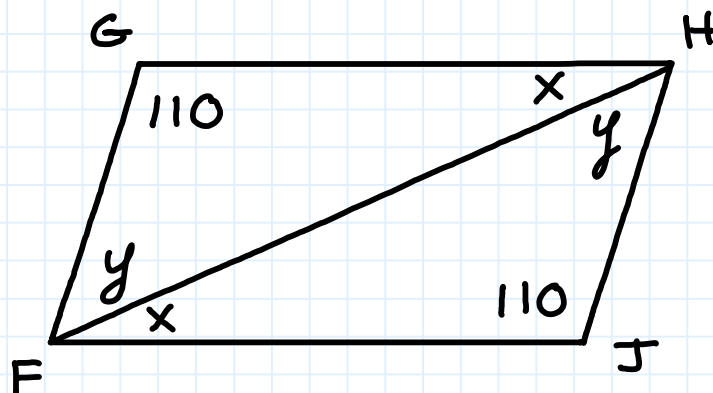
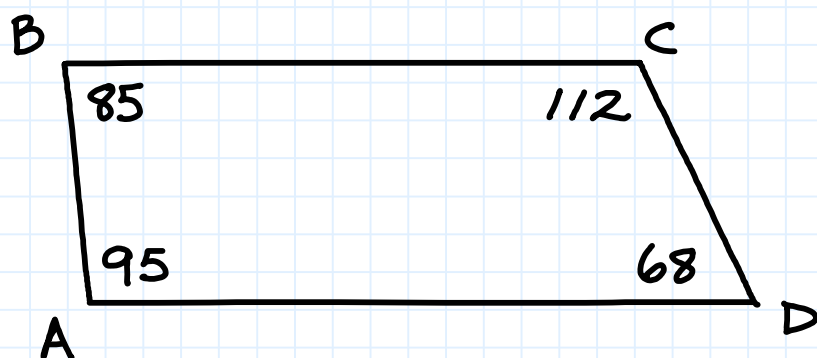


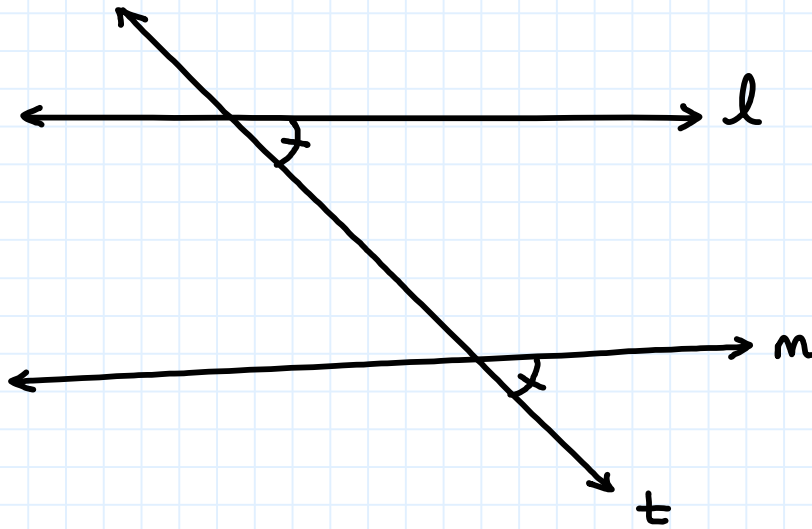
## Overview of problems



Example Set: A

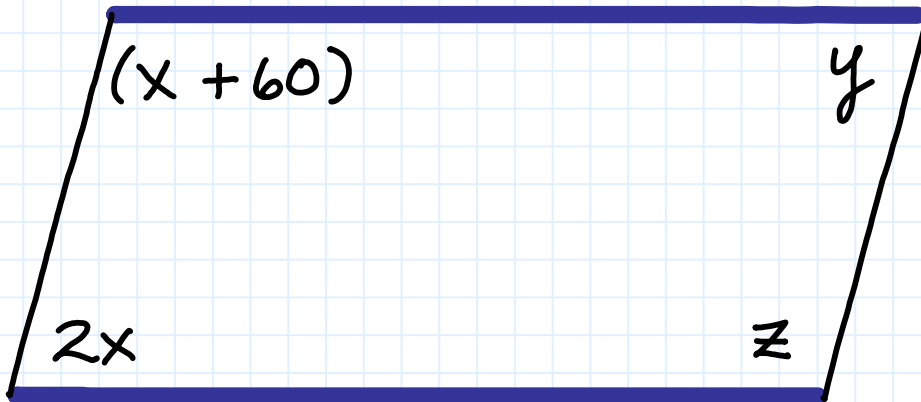
Determine if any segments are parallel. Justify your conclusion by a postulate or theorem



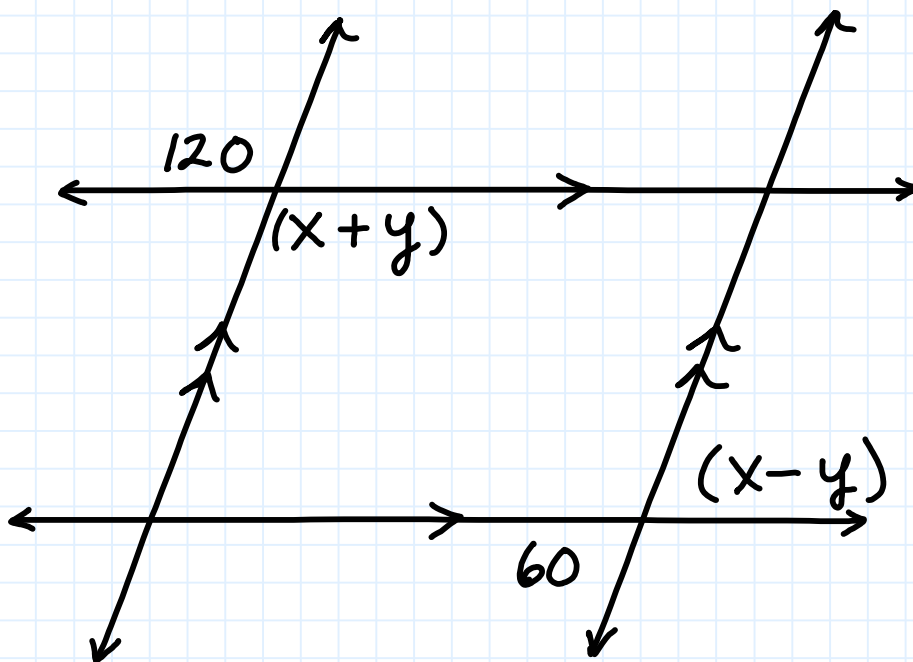
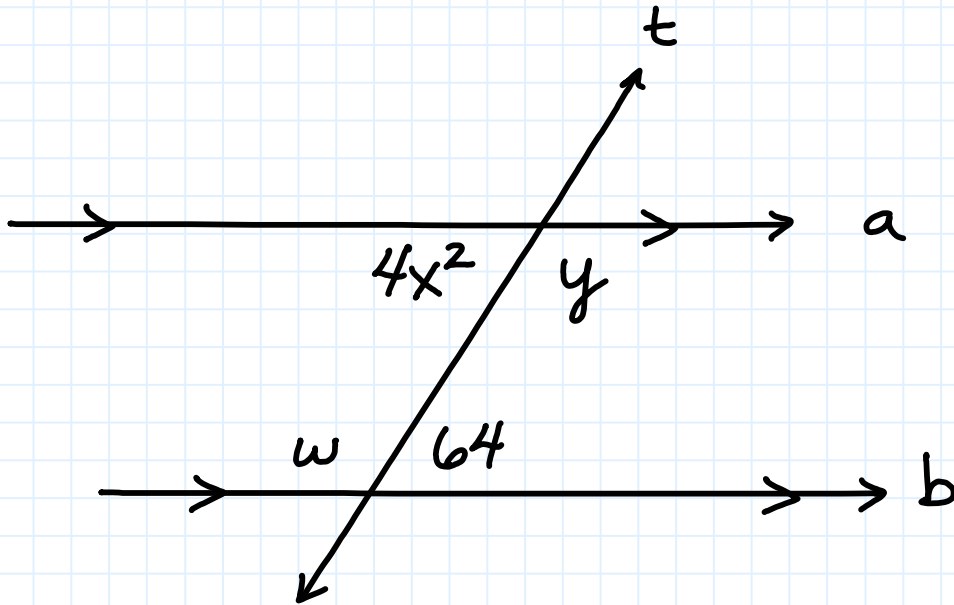


Example Set: B

Find the values of the variables that make the bold lines parallel



Find the values of the variables

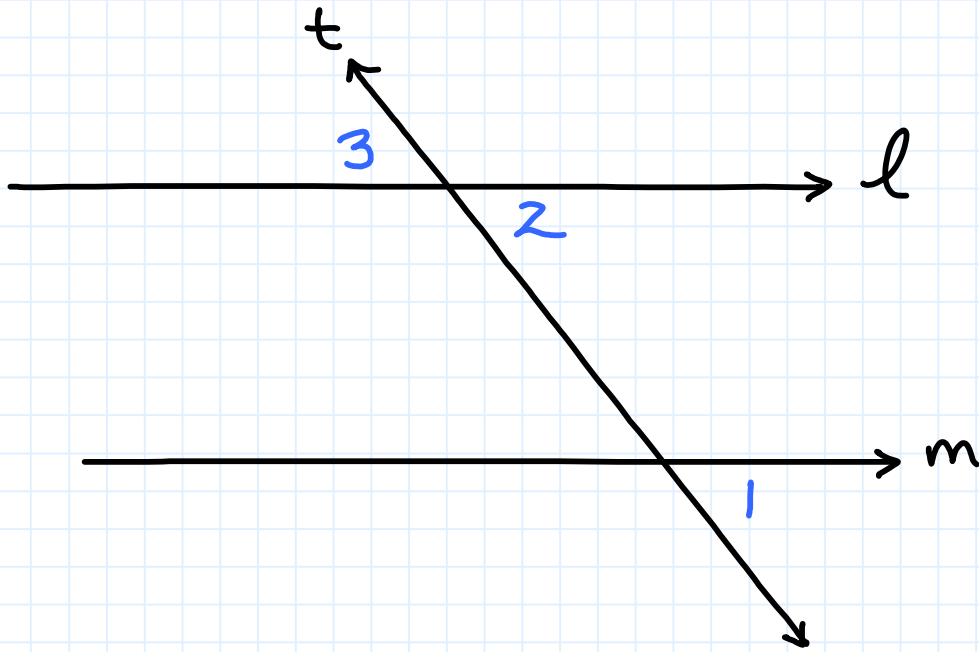




## Example Set: C

Write a two column proof for the following

Given  $\angle 1 \cong \angle 3$  Prove that  $l \parallel m$



# Proving Lines Parallel

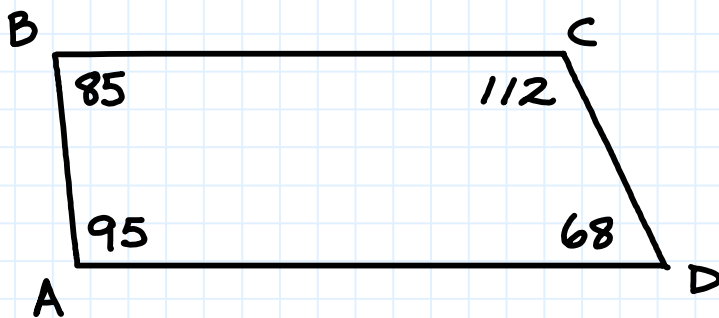


## Overview of problems- KEY

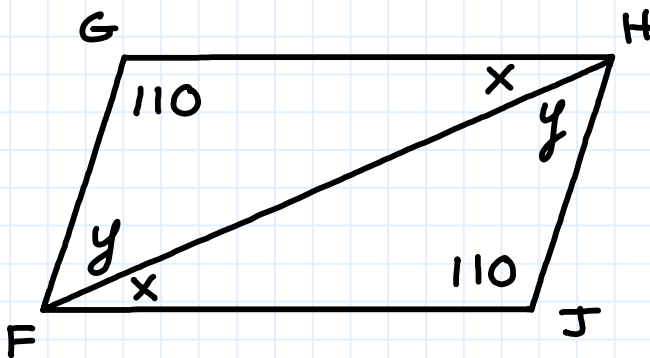


Example Set: A

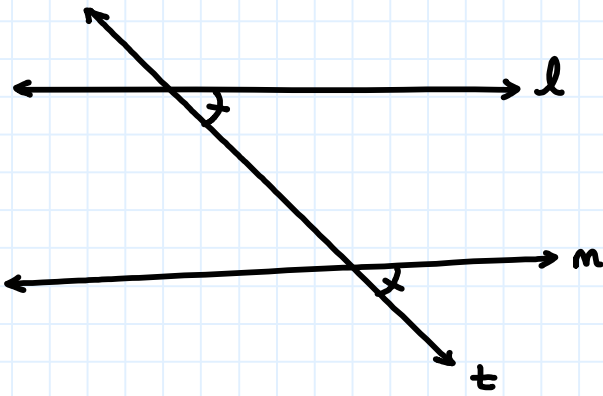
Determine if any segments are parallel. Justify your conclusion by a postulate or theorem



$\overline{BC} \parallel \overline{AD}$   
Same-side  
interior angles are  
suplem.



$GF \parallel HJ$   
 $GH \parallel FJ$   
if alternate-  
interior angles  
are congruent,  
the lines are  $\parallel$ .

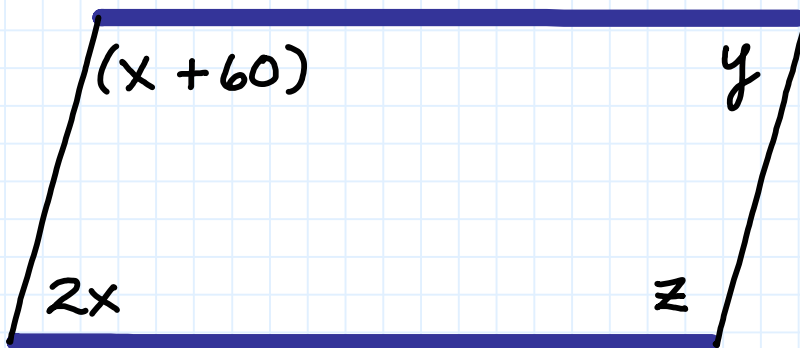


$l \parallel m$   
corresponding  
angles are  $\cong$ ,  
therefore the  
lines are  $\parallel$ .



Example Set: B

Find the values of the variables that make the bold lines parallel

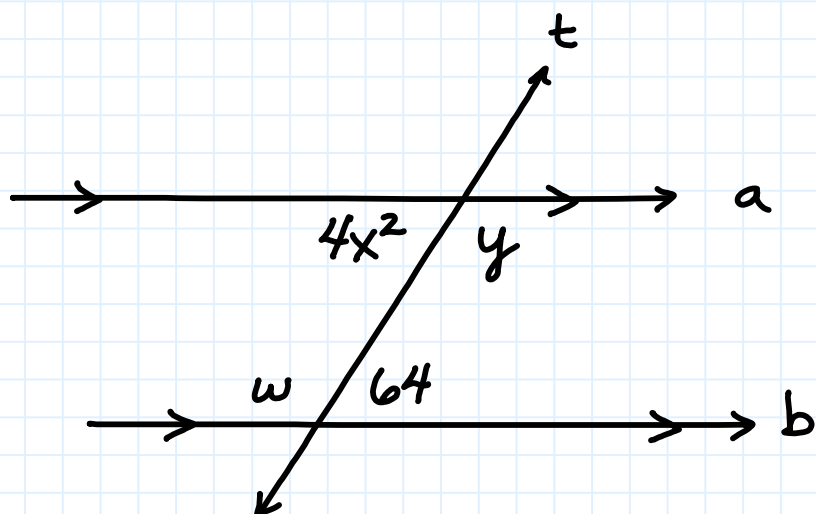


$$x = 40$$

$$y = 80$$

$$z = 100$$

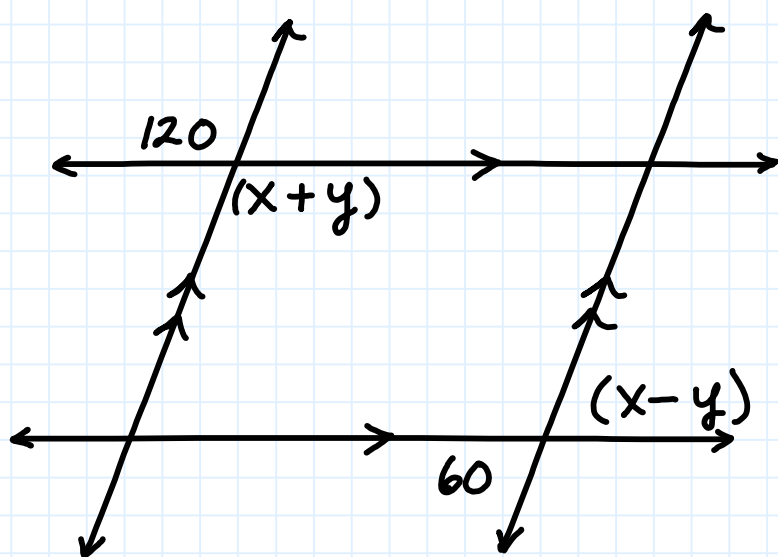
Find the values of the variables



$$x = 4$$

$$y = 116$$

$$w = 116$$



$$x = 90$$

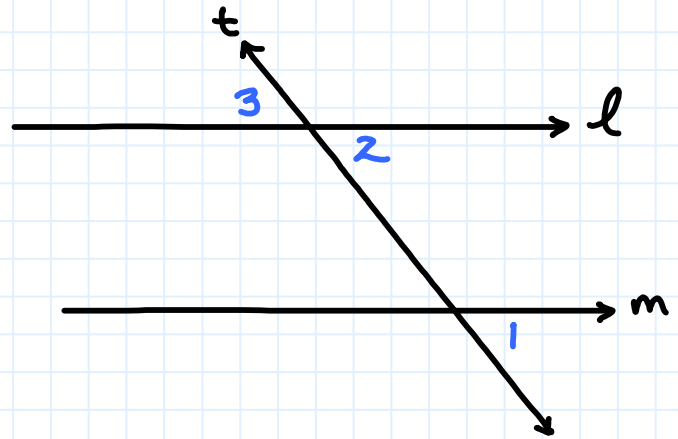
$$y = 30$$



## Example Set: C

Write a two column proof for the following

Given  $\angle 1 \cong \angle 3$  Prove that  $l \parallel m$



Statement	Reason
$\angle 1 \cong \angle 3$	Given
$\angle 3 \cong \angle 2$	Vertical $\angle$ 's are $\cong$
$\angle 1 \cong \angle 2$	Trans. Property
$l \parallel m$	if two lines cut by a transversal and corresponding angles are congruent - then the lines are $\parallel$ .