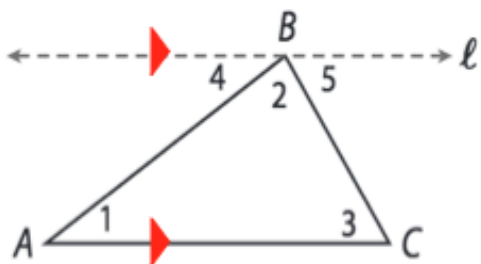
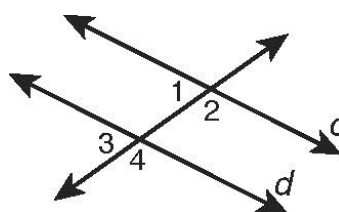


Parallel and Perpendicular Lines Homework

1. Prove the triangle angle sum theorem.

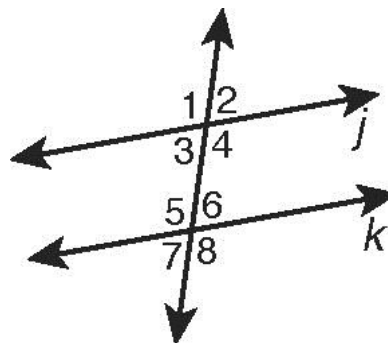


2. Use the given information to show that $c \parallel d$.
State which converse you used.



Given: $m\angle 1 = 2x^\circ$, $m\angle 3 = (3x - 31)^\circ$, $x = 31$

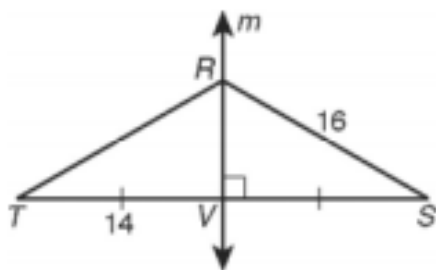
3. Use the given information to show that $j \parallel k$.
State which converse you used.



a. **Given:** $m\angle 3 = 12x^\circ$, $m\angle 5 = 18x^\circ$, $x = 6$

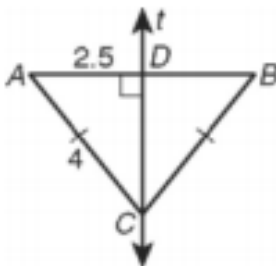
b. **Given:** $m\angle 2 = 8x^\circ$, $m\angle 7 = (7x + 9)^\circ$, $x = 9$

4.



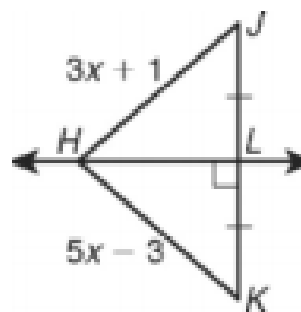
$RT =$ _____

5.



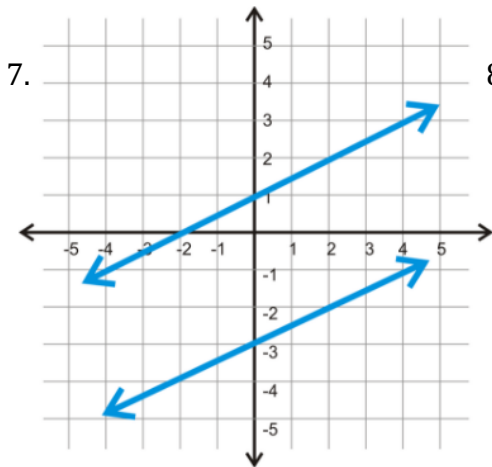
$AB =$ _____

6.

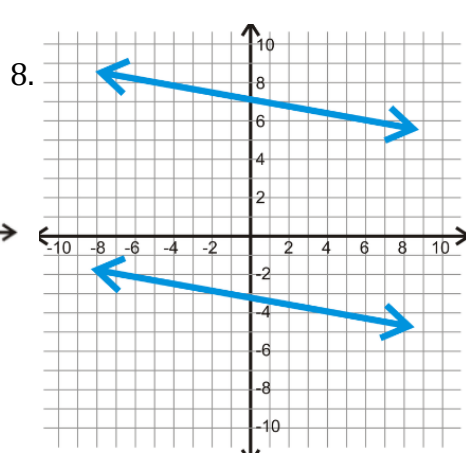


$HJ =$ _____

Each set of lines in 7-8 has parallel lines.
Write the equations for each set of lines.



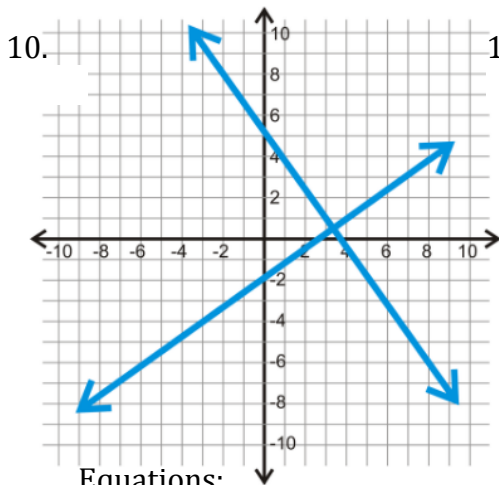
Equations:



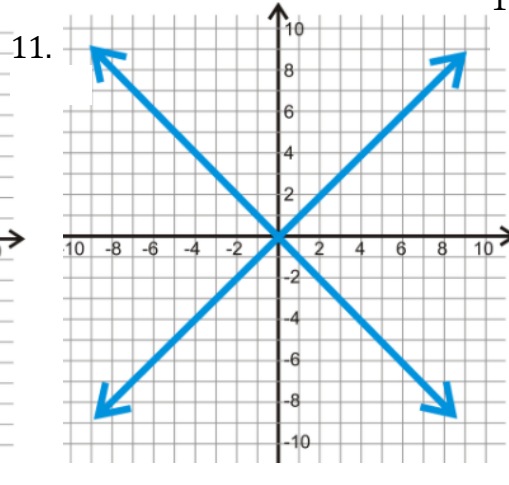
Equations:

9. What do you notice about the equations of parallel lines? What is the same? What is different?

Each set of lines in 7-8 has perpendicular lines.
Write the equations for each set of lines.



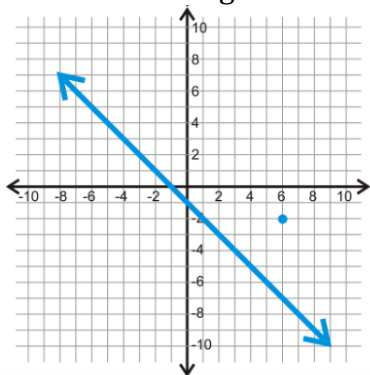
Equations:



Equations:

12. What do you notice about the equations of perpendicular lines? What is the same? What is different?

Challenge!



Graph a line parallel to the line given through the given point. Write the equation for your line.

Graph a line perpendicular to the line given through the given point. Write the equation for your line.