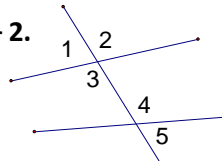


Why did Grok jump up and down the first time he saw a variable in Algebra class?

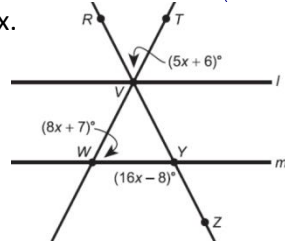
Solve each problem below. Find your answer in the answer column and notice the two letters next to it. Write these letters in the two boxes that contain the number of that exercise.

Use the diagram to the right for questions 1 – 2.

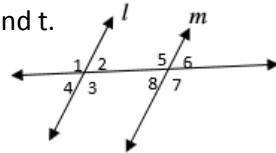
- Name a pair of alternate exterior angles.
- Name a pair of corresponding angles.



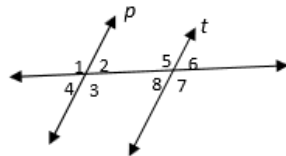
- Given $l \parallel m$, please find the value of x .



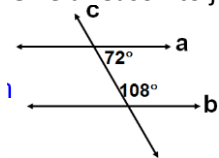
- Given $l \parallel m$, $m\angle 3 = (4s - 3t)^\circ$, $m\angle 7 = (9s + 12t)^\circ$, and $m\angle 4 = (5s + 6t)^\circ$, please solve for s and t .



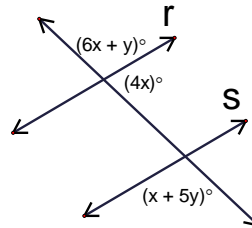
- Given $p \parallel t$, $m\angle 3 = (x^2 - 2x)^\circ$ and $m\angle 6 = (3x + 108)^\circ$, please solve for x .



- Give a reason to justify why $a \parallel b$ in the diagram below.



- Please find the values of x and y that will make $r \parallel s$.



- Please find the equation of the line that passes through the point $P(-2, 7)$ and is parallel to the line $y = -3x + 2$.

- Line a contains points $S(-5, 6)$ and $T(7, -2)$. Line b contains points $P(-12, -2)$ and $H(-9, -4)$. Please determine if lines a and b are parallel, perpendicular, or neither.

- Line m is perpendicular to line n . Line n is perpendicular to line r . Line m passes through $(-2, 7)$ and the equation for line r is $y = 6x - 4$. Please find the equation for line m .

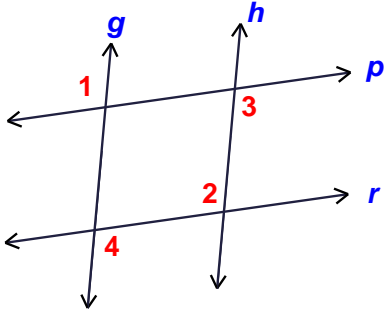
- Given line $j: y + 6x = 2$ and line $k: 6y - x = 12$. Please determine if lines j and k are parallel, perpendicular, or neither.

- BI** Neither
- NG** 7
- MO** Cons. Int \angle Converse
- VE** $y = 6x + 7$
- SA** $\angle 1$ & $\angle 5$
- SI** Parallel
- LL** $x = 36, y = 72$
- NT** $\angle 2$ & $\angle 4$
- ME** $y = -3x + 1$
- NX** Perpendicular
- GH** $-9, 8$
- TI** $y = 6x + 19$
- IT** $-7.5, 22.5$
- NA** Alt. Int. \angle Converse
- WA** $16, 20$
- KI** $y = -3x + 7$

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|----|----|---|---|---|---|----|----|---|---|---|---|---|---|---|---|
| 4 | 4 | 7 | 7 | 1 | 1 | 11 | 11 | 9 | 9 | 5 | 5 | 10 | 10 | 3 | 3 | 6 | 6 | 8 | 8 | 2 | 2 |
|---|---|---|---|---|---|----|----|---|---|---|---|----|----|---|---|---|---|---|---|---|---|

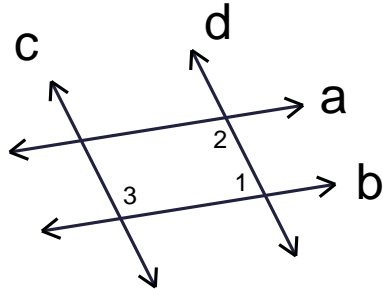
Proof Practice

- 1) **Given:** $\angle 1 \cong \angle 3$
Prove: $\angle 2 \cong \angle 4$



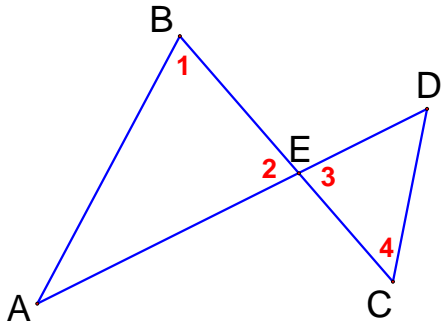
| Statements | Reasons |
|------------------------------|----------|
| 1. $\angle 1 \cong \angle 3$ | 1. Given |
| 2. | 2. |
| 3. | 3. |

- 2) **Given:** $a \parallel b$ and $\angle 2 \cong \angle 3$
Prove: $c \parallel d$



| Statements | Reasons |
|------------------------------|----------|
| 1. $a \parallel b$ | 1. Given |
| 2. | 2. |
| 3. $\angle 2 \cong \angle 3$ | 3. Given |
| 4. | 4. |
| 5. | 5. |

- 3) **Given:** $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$
Prove: $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$



| Statements | Reasons |
|------------------------------|----------|
| 1. $\angle 1 \cong \angle 2$ | 1. Given |
| 2. | 2. |
| 3. $\angle 3 \cong \angle 4$ | 3. Given |
| 4. | 4. |
| 5. | 5. |