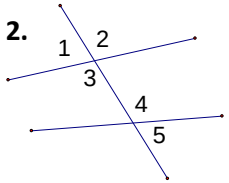
Geometry A
Unit 2 Review Puzzle

Name: _____
Date: _____ Period: _____

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

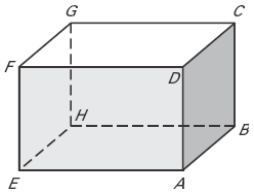
Solve each problem below. Find your answer in the answer column and notice the two letters next to it. Write these letters in the two boxes that contain the number of that exercise.

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

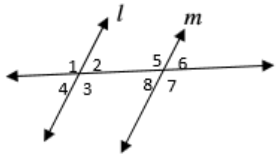


1. Name a pair of alternate exterior angles.
2. Name a pair of corresponding angles.

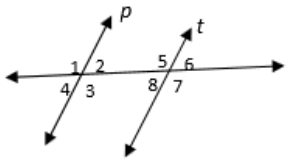
3. Lines $\overleftrightarrow{EA}$ and $\overleftrightarrow{GH}$ are _____ lines.



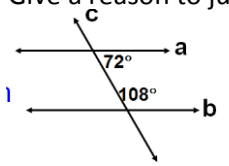
4. Given $l \parallel m$, $m\angle 1 = (15x + 32)°$, and $m\angle 7 = (9x + 68)°$, please solve for x.



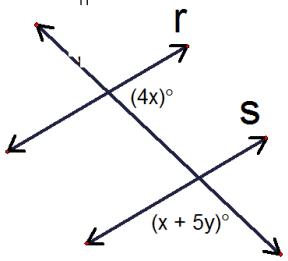
5. Given $p \parallel t$, $m\angle 3 = (3x)°$, $m\angle 2 = (2x)°$, and $m\angle 6 = y°$. Please solve for x and y.



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



7. If x = 16, what value of y will make $r \parallel s$?



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

9. 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.

10. Please find the equation of the line that passes through point R(5, -2) and is perpendicular to the line that contains the points O(4, -1) and B(3, -6).

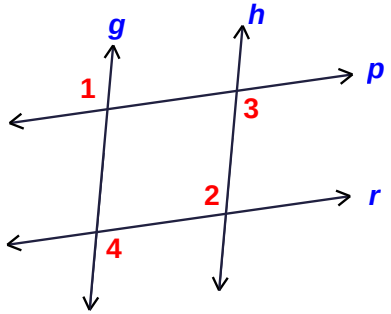
11. Given line j: y + 6x = 2 and line k: 6y – x = 12. Please determine if lines *j* and *k* are parallel, perpendicular, or neither.

BI	Neither
NG	Skew
MO	Cons. Int ∠ Converse
VE	y = 6x + 7
SA	∠1 & ∠5
SI	Parallel
LL	8
NT	∠2 & ∠4
ME	y = -3x + 1
NX	Perpendicular
GH	36, 72
TI	$y = -\frac{1}{5}x - 1$
IT	6
NA	Alt. Int. ∠ Converse
WA	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

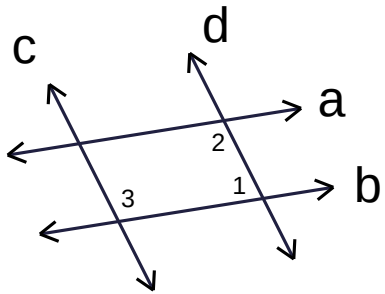
Proof Practice

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



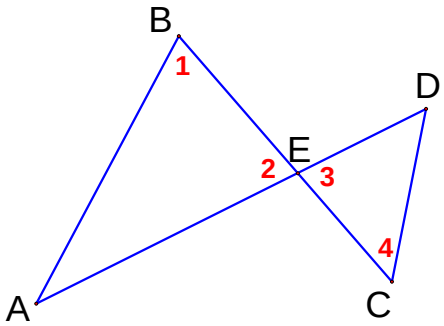
Statements	Reasons
1. $\angle 1 \cong \angle 3$	1. Given
2. $g \parallel h$	2.
3. $\angle 2 \cong \angle 4$	3.

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



Statements	Reasons
1. $a \parallel b$	1. Given
2. $\angle 1$ and $\angle 2$ are supplementary	2.
3. $\angle 2 \cong \angle 3$	3. Given
4. $\angle 1$ and $\angle 3$ are supplementary	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. $\angle 2 \cong \angle 3$	2.
3. $\angle 3 \cong \angle 4$	3. Given
4. $\angle 1 \cong \angle 4$	4.
5.	5.