

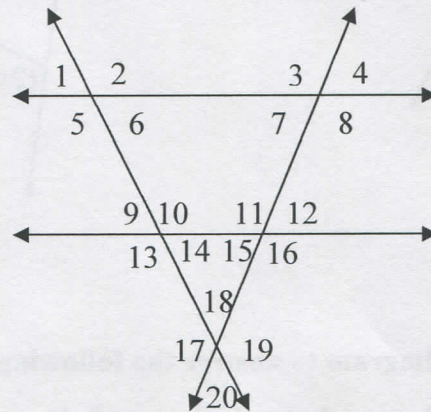
Test Review – Chapter 3 Parallel and Perpendicular Lines

Use when you get it right all by yourself
S Use when you did it all by yourself, but made a silly mistake
H Use when you could do it alone with a little help from teacher or peer
G Use when you completed the problem in a group
X Use when a question was attempted but wrong (get help)
N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Classifying Angle Pairs	1 - 8	1 - 8	
Congruent Angles	9, 10	12 - 15	
Supplementary Angles	11	12 - 15	
Solving & Setting up Equations with Parallel lines & a transversal		16 - 21	16 - 21
Solving for angles measures using linear pairs, vertical angles, and triangle sums		22 - 26	22 - 26
Slopes of Parallel & Perpendicular Lines		27 - 29	27 - 29
Writing equations of parallel & perpendicular lines		27 - 29	27 - 29
Two-column proofs			30 - 32

I. Classify each pair of angles as *alternate interior angles*, *alternate exterior angles*, *corresponding angles*, *same-side interior angles*, *same-side exterior angles*, *linear pair*, *vertical angles*, or *None*.

- Corr 1. $\angle 1$ & $\angle 3$
- SSIA 2. $\angle 6$ & $\angle 7$
- AIA 3. $\angle 2$ & $\angle 7$
- SSIA 4. $\angle 10$ & $\angle 11$
- AEA 5. $\angle 1$ & $\angle 8$
- AEA 6. $\angle 4$ & $\angle 15$
- none 7. $\angle 6$ & $\angle 16$
- Corr 8. $\angle 20$ & $\angle 5$



9. If $a \parallel b$, but c is not parallel to d , name all angles congruent to $\angle 2$.

$\angle 5$; $\angle 4$; $\angle 7$

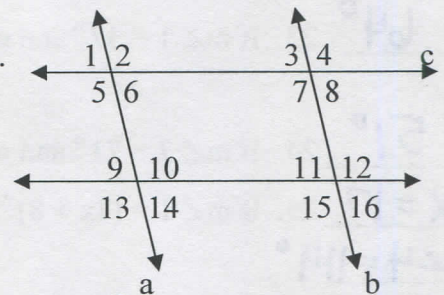
10. If $c \parallel d$, but a is not parallel to b , name all angles congruent to $\angle 2$.

$\angle 5$; $\angle 13$; $\angle 10$

11. If $a \parallel b$ and $c \parallel d$, name all the angles supplementary to $\angle 1$.

$\angle 5$, $\angle 2$, $\angle 4$, $\angle 7$, $\angle 12$, $\angle 15$, $\angle 13$, $\angle 10$

12. If $m\angle 13 = 123^\circ$, $a \parallel b$ and $c \parallel d$, then $m\angle 15 =$ 123° and $m\angle 3 =$ 57°



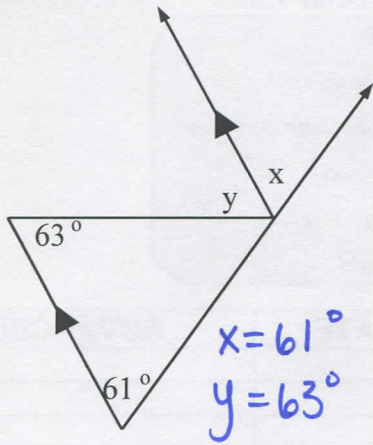
13. If $m\angle 6 = 38^\circ$, $a \parallel b$ and $c \parallel d$, then $m\angle 12 =$ 142° , and $m\angle 4 =$ 142° .

14. If $m\angle 2 = 115^\circ$, $m\angle 16 = 80^\circ$ and $c \parallel d$, then $m\angle 14 =$ 65° , and $m\angle 7 =$ 100° .

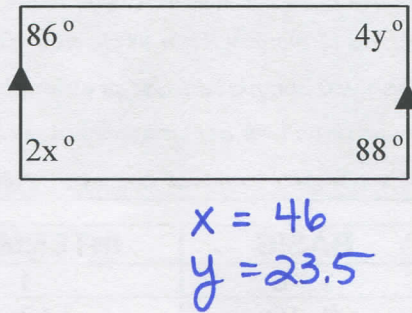
15. If $m\angle 2 = 115^\circ$, $m\angle 16 = 80^\circ$ and $a \parallel b$, then $m\angle 14 =$ 80° , and $m\angle 7 =$ 115° .

16 – 21: Find the values of x and y.

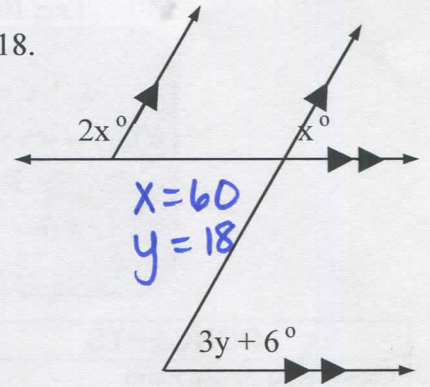
16.



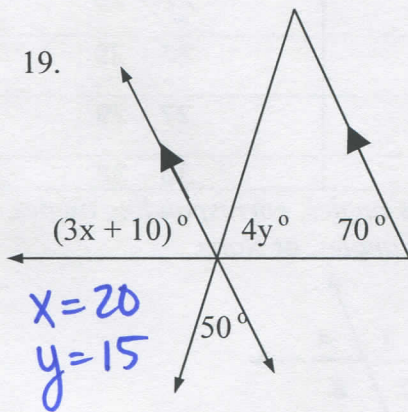
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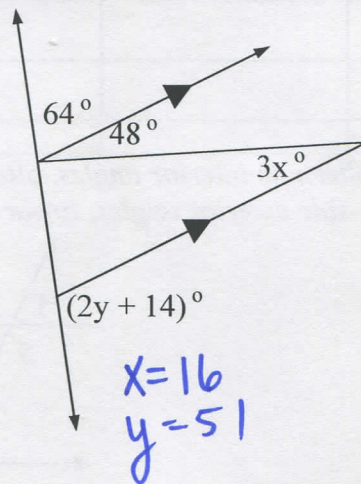
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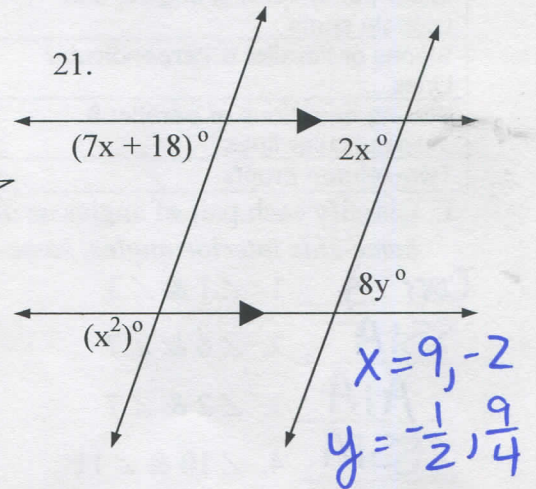
19.



20.



21.



22 – 26: Use the diagram to answer the following.

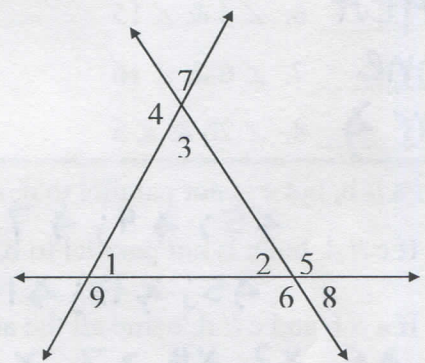
1 & 2 22. $m\angle 4 = m\angle _? _ + m\angle _? _.$

64 23. If $m\angle 1 = 37^\circ$ and $m\angle 5 = 101^\circ$, then $m\angle 3 = _? _.$

51 24. If $m\angle 7 = 73^\circ$ and $m\angle 5 = 124^\circ$, then $m\angle 1 = _? _.$

x = 17 25. If $m\angle 1 = (4x + 8)^\circ$, $m\angle 2 = 2(x + 2)^\circ$ and $m\angle 3 = 6(x - 6)^\circ$, then $x = _? _$ and $m\angle 4 = _? _.$
 $m\angle 4 = 114^\circ$

x = 21 26. If $m\angle 6 = (6x + 23)^\circ$, $m\angle 1 = (5x - 19)^\circ$ and $m\angle 3 = 7(x - 12)^\circ$, then $x = _? _$ and $m\angle 5 = _? _.$
 $m\angle 5 = 149^\circ$



27 - 29: Write the equation of the line in slope-intercept form for the following.

27. The perpendicular segment with endpoints $(-4, 9)$ and $(12, -5)$.

$$m = \frac{9+5}{-4-12} = \frac{14}{-16} = -\frac{7}{8} \quad \perp m = \frac{8}{7}$$

$$y-9 = \frac{8}{7}(x+4) \rightarrow y-9 = \frac{8}{7}x + \frac{32}{7} \rightarrow \boxed{y = \frac{8}{7}x + \frac{95}{7}}$$

28. The line that contains $(6, 1)$ that is perpendicular to the line containing $(3, -2)$ and $(5, 7)$.

$$y = -\frac{2}{9}x + \frac{7}{3}$$

$$\perp m = -\frac{2}{9}$$

29. In a coordinate plane, the line that passes through the points $(-1, 6)$ and $(8, -5)$ is perpendicular to the line that passes through $(1, -12)$ and $(-10, q)$. Find q .

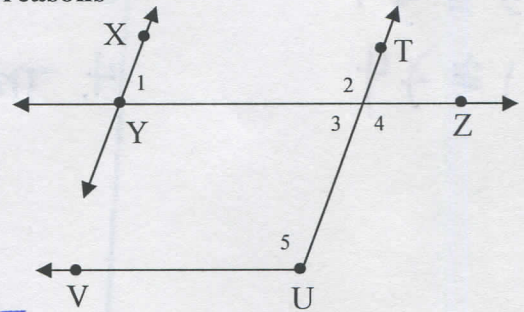
$$\perp m = \frac{9}{11}$$

$$q = -3$$

Two-Column proofs. Be sure to number your statements and reasons

30. Given: $m\angle 1 + m\angle 4 = 180^\circ$, $m\angle 1 + m\angle 5 = 180^\circ$

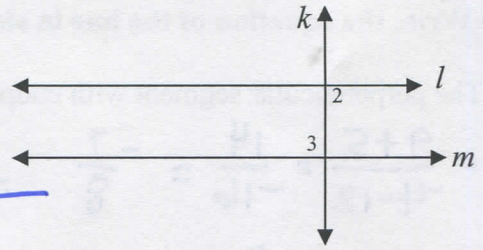
Prove: $\overleftrightarrow{YZ} \parallel \overleftrightarrow{UV}$



Statements	Reasons
1. $m\angle 1 + m\angle 4 = 180$ $m\angle 1 + m\angle 5 = 180$	1. given
2. $m\angle 1 + m\angle 4 = m\angle 1 + m\angle 5$	2. Substitution PDE
3. $m\angle 4 = m\angle 5$	3. Subtraction PDE
4. $\angle 4 \cong \angle 5$	4. If $\cong \Rightarrow \cong$
5. $\overleftrightarrow{YZ} \parallel \overleftrightarrow{UV}$	5. If AIA $R \cong \Rightarrow \Leftrightarrow R \parallel$ (AIA converse)

31. Given: $k \perp l, k \perp m$

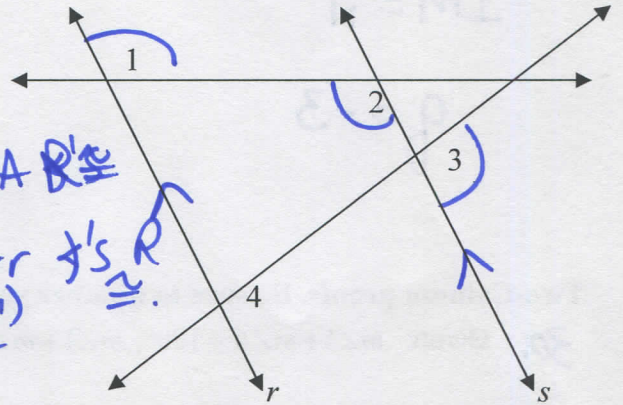
Prove: $l \parallel m$



Statements	Reasons
1. $k \perp l; k \perp m$	1. given
2. $\angle 2 \cong \angle 3$ R R + \angle 's	2. Def of $\perp \Leftrightarrow \angle$
3. $m \angle 2 = 90^\circ; m \angle 3 = 90^\circ$	3. Def of R + \angle 's
4. $m \angle 2 = m \angle 3$	4. Substitution POE
5. $\angle 2 \cong \angle 3$	5. IF $= \Rightarrow \cong$
6. $l \parallel m$	6. IF AIA R $\cong \Rightarrow \Leftrightarrow R \parallel$. (AIA converse)

32. GIVEN: $r \parallel s$ and $\angle 2 \cong \angle 3$

PROVE: $\angle 1 \cong \angle 4$.



Statements	Reasons
1. $r \parallel s; \angle 2 \cong \angle 3$	1. given
2. $\angle 1 \cong \angle 2$	2. IF $\Leftrightarrow R \parallel \Rightarrow$ AIA R's \cong (AIA Thm)
3. $\angle 3 \cong \angle 4$	3. IF $\Leftrightarrow R \parallel \Rightarrow$ Corr \angle 's R's \cong (Corr \angle Thm)
4. $\angle 1 \cong \angle 4$	4. Transitive POE

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

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1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!

