NAME **Key** Date _____ Pd __

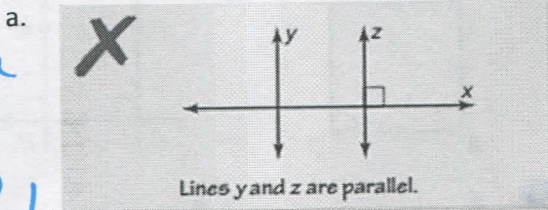### 3.4 Perpendicular Line Proofs DAY ONE CYU

☑ 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
Distance Formula for a Coordinate Plane	1a	1b	
Line Pair Perpendicular Theorem	17		6
Perpendicular Transversal Theorem	2a, 17	5	6
Lines Perpendicular to a Transversal Theorem	17		6
Pythagorean Theorem		2b	6
Vertical Angles			4
Linear Pairs			4
Supplementary Angles			4, 6
Alternate Exterior Angles Theorem		5	

1. Find the distance from A to $\overleftrightarrow{AZ}$.

   a. ≈ 3.2 units

   b. ≈ 4.1 units
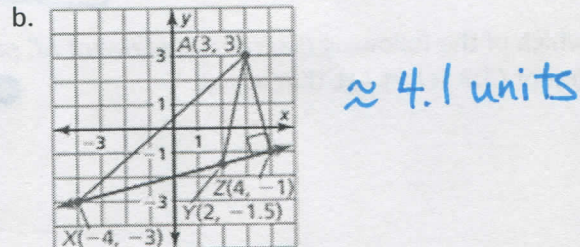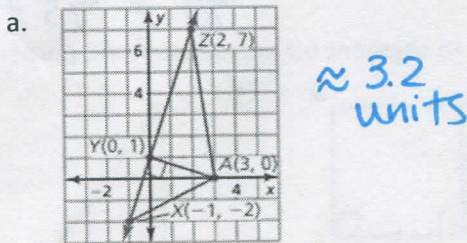
2. Describe the error in words and then correct the error in the statement about the diagram.

   a.
   Lines y and z are parallel.

   $\overleftrightarrow{S}$ ⊥ to a Transversal Theorem both $\overleftrightarrow{S}$ R⊥

   $\overleftrightarrow{S}$ x & z are ⊥

   b.
   The distance from point C to $\overline{AB}$ is 12 centimeters.
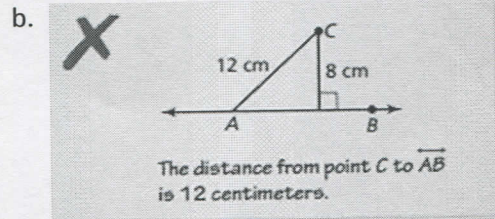
   The length of the ⊥ segment should be used.

   C to $\overline{AB}$ is 8cm

3. Determine which lines, if any, must be parallel. Explain your reasoning.

   a.
   none
   v ⊥ y

   b.
   b//c
   $\overleftrightarrow{S}$ ⊥ to a Transversal Thm

   c.
   m//n
   $\overleftrightarrow{S}$ ⊥ to a Transversal Thm

   d.
   none
   a⊥d & b⊥c

e.

$n // p$

$\Longleftrightarrow \perp$ to a Transversal Thm

f.

$y // z$ & $w // x$

$\Longleftrightarrow \perp$ to a Transversal Thm

$w // x \Longleftrightarrow \perp$ to a Transversal Thm
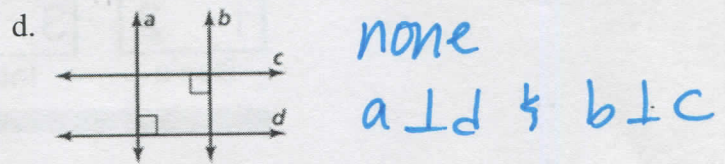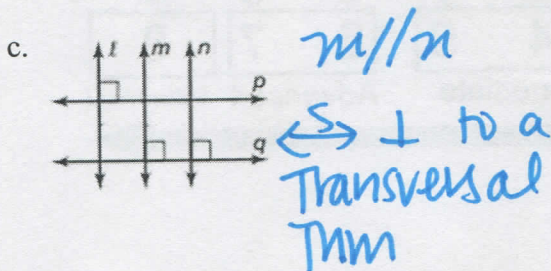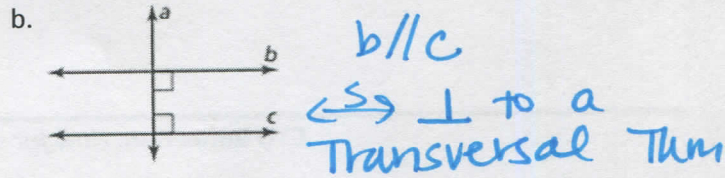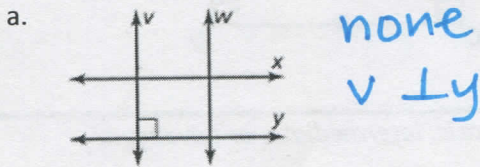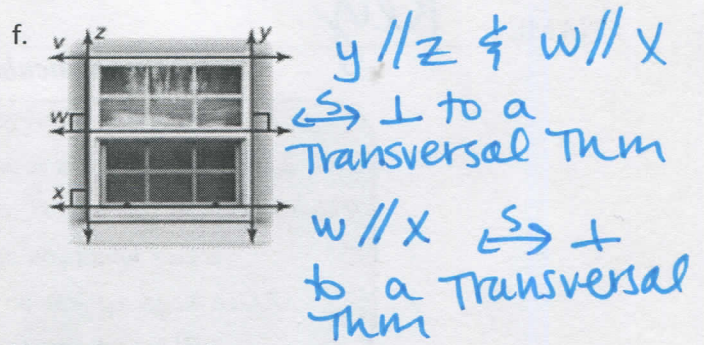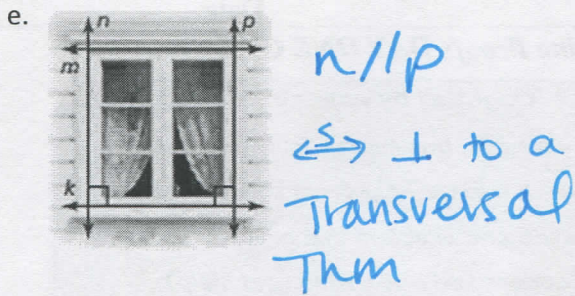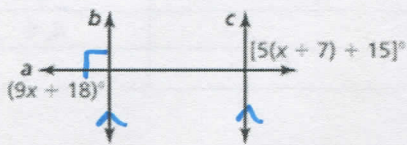
4. Find all the unknown angle measures in the diagram. Justify your answer for each measure.
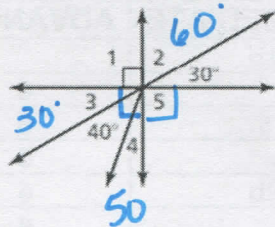
$m\angle 3 = 30° \Rightarrow$ Vertical $\angle$'s

$m\angle 1 + m\angle 2 + 30° = 180 \Rightarrow$ Supp. $\angle$'s

$m\angle 1 = m\angle 5 = 90° \Rightarrow$ Vertical $\angle$'s

$m\angle 4 = 50° \Rightarrow m\angle 3 + m\angle 4 + 40° = 90° \Rightarrow$ complement $\angle$'s
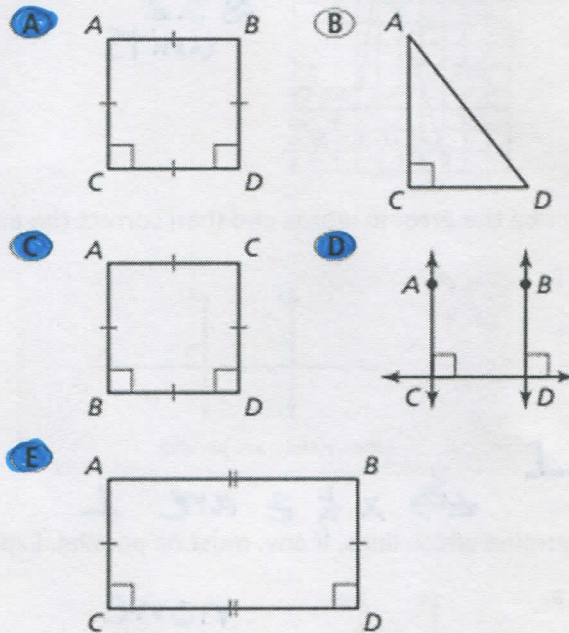
5. Find the value of x when line a is perpendicular to line b and line b is parallel to line c.

$9x + 18 = 90$

$9x = 72$

$\boxed{X = 8}$

$9x + 18 = 5(x+7) + 15$

$9(8) + 18 = 5(8+7) + 15$

$72 + 18 = 5(15) + 15$

$90 = 75 + 15$ ✓

6. In which of the following diagrams is segment AC parallel to segment BD and segment AC perpendicular to segment CD? Select ALL that apply.

(A)

(B)

(C)

(D)

(E)

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.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Basic — Intermediate — Advanced — Solved ALL!