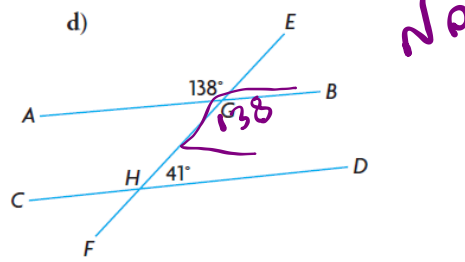
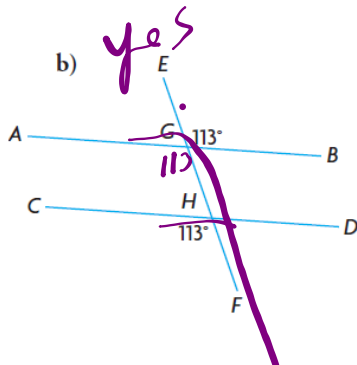
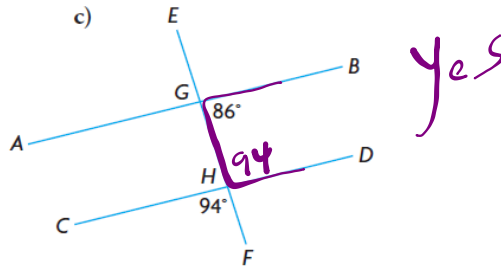
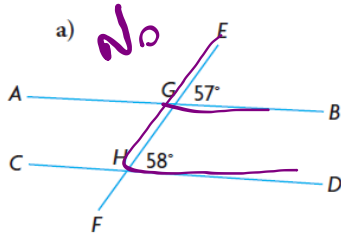


Homework... Questions

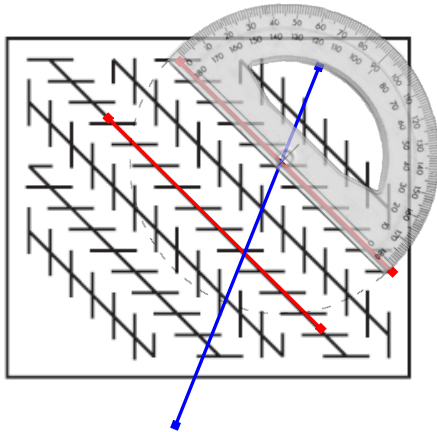
p. 72: #4-6 (5, 6)

p. 78: #2, (8), 10, 12, 20

5. In each diagram, is AB parallel to CD ? Explain how you know.



6. Nancy claims that the diagonal lines in the diagram to the left are not parallel. Do you agree or disagree? Justify your decision.

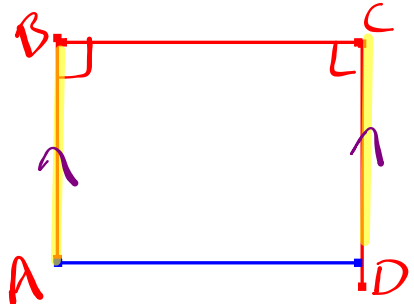


8. a) Joshua made the following conjecture: "If $AB \perp BC$ and $BC \perp CD$, then $AB \perp CD$." Identify the error in his reasoning.

perpendicular

Joshua's Proof

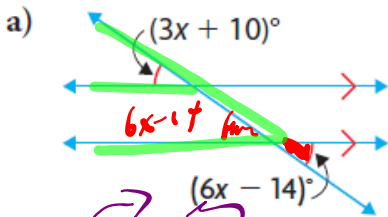
Statement	Justification
$AB \perp BC$	Given
$BC \perp CD$	Given
$AB \perp CD$	Transitive property



$AB \parallel CD$ Geometric shape

b) Make a correct conjecture about perpendicular lines.

20. Solve for x .



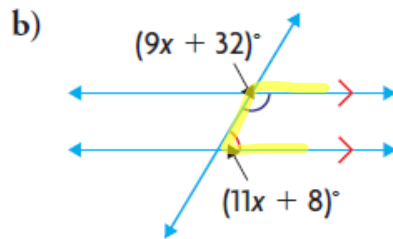
$$6x - 14 = 3x + 10$$

$$6x - 3x = 10 + 14$$

$$3x = 24$$

$$\frac{3x}{3} = \frac{24}{3}$$

$$x = 8$$



$$9x + 32 + 11x + 8 = 180$$

$$20x + 40 = 180$$

$$20x = 180 - 40$$

$$20x = 140$$

$$\frac{20x}{20} = \frac{140}{20}$$

$$x = 7$$

2.3

Angle Properties in Triangles

GOAL

Prove properties of angles in triangles, and use these properties to solve problems.

Construct a triangle with paper...

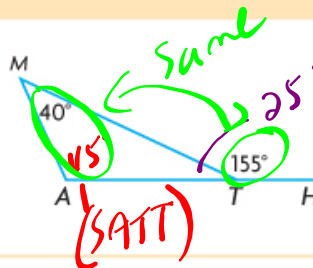
- tear off the angles and line them up!

CONJECTURE

APPLY the Math

EXAMPLE 1 Using angle sums to determine angle measures

In the diagram, $\angle MTH$ is an **exterior angle** of $\triangle MAT$. Determine the measures of the unknown angles in $\triangle MAT$.



Serge's Solution

$$\begin{aligned} \angle MTA + \angle MTH &= 180^\circ \\ \angle MTA + (155^\circ) &= 180^\circ \\ \angle MTA &= 25^\circ \end{aligned}$$

$\angle MTA$ and $\angle MTH$ are supplementary since they form a straight line.

$$\begin{aligned} \angle MAT + \angle AMT + \angle MTA &= 180^\circ \\ \angle MAT + (40^\circ) + (25^\circ) &= 180^\circ \\ \angle MAT &= 115^\circ \end{aligned}$$

The sum of the measures of the interior angles of any triangle is 180° .

The measures of the unknown angles are:
 $\angle MTA = 25^\circ$; $\angle MAT = 115^\circ$.

Your Turn

If you are given one interior angle and one exterior angle of a triangle, can you always determine the other interior angles of the triangle? Explain, using diagrams.

Answer

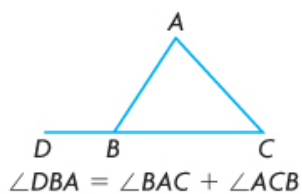
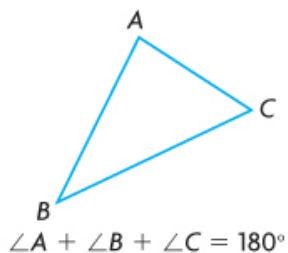
In Summary

Key Idea

- You can prove properties of angles in triangles using other properties that have already been proven.

Need to Know

- In any triangle, the sum of the measures of the interior angles is proven to be 180° .
- The measure of any exterior angle of a triangle is proven to be equal to the sum of the measures of the two non-adjacent interior angles.



HW... Section 2.3: #1 - 13

Attachments

2s3e1 finalt.mp4