

Grade 4 Unit 7

Lesson 10

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Unit 7 Lesson 10: Angle Measurement and Perpendicular Lines

WU Number Talk: Quotients (Warm up)

Student Task Statement

Find the value of each expression mentally.

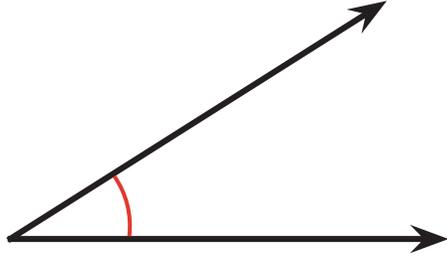
- $180 \div 2$
- $180 \div 4$
- $360 \div 8$
- $360 \div 16$

1 Angles Here, There, Everywhere

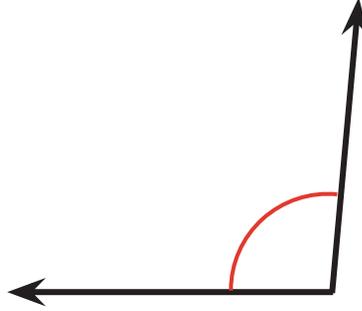
Student Task Statement

1. Use a protractor to find the value of each angle measurement in degrees.

a.



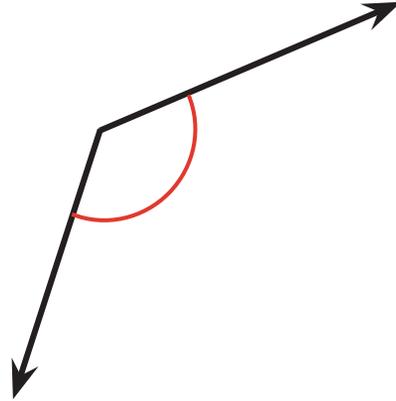
b.



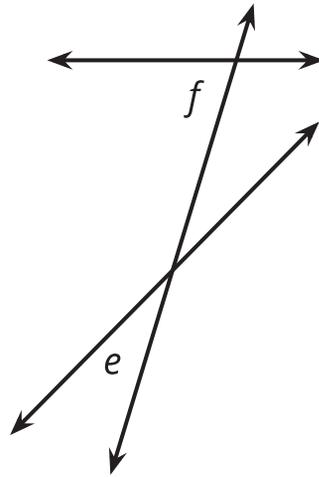
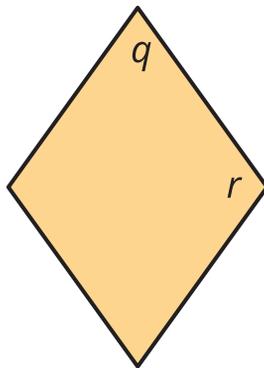
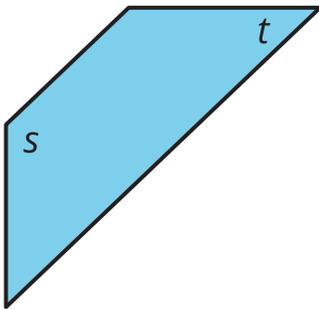
c.



d.



2. Use a protractor to measure the labeled angles in each figure.



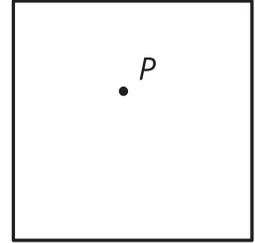
2 A Folding Challenge

Student Task Statement

Tyler gave Lin a challenge: "Without using a protractor, draw four 90° angles. All

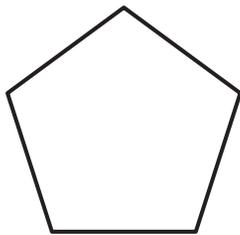
angles have their vertex at point P .”

Lin folded the paper twice, making sure each fold goes through point P . Then, she traced the creases.



1. Your teacher will give you a sheet of paper. Draw a point on it. Then, show how Lin might have met the challenge.
2. When Lin folded the paper, the creases formed a pair of **perpendicular lines**. What do you think “perpendicular lines” mean?
3. Use Lin’s method to create a new pair of perpendicular lines through the same point. Trace the creases with a different color. Be prepared to explain how you know the lines you created are perpendicular.
4. Which shapes have sides that are perpendicular to one another?

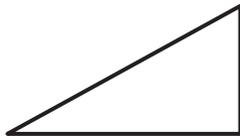
A



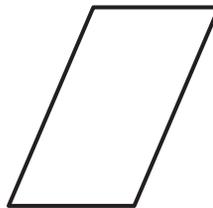
B



C



D



Mark the perpendicular sides. Be prepared to explain how you know the sides are perpendicular.

Images for Activity Synthesis

