Name Classwork & Homework (-KEY) Date

1.5 Measuring and Constructing Angles

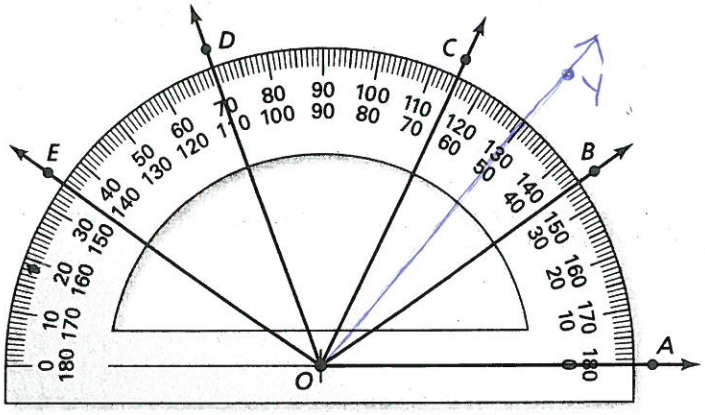
For use with Exploration 1.5

Essential Question How can you measure and classify an angle?

1 EXPLORATION: Measuring and Classifying Angles

Go to *BigIdeasMath.com* for an interactive tool to investigate this exploration.

Work with a partner. Find the degree measure of each of the following angles. Classify each angle as acute, right, or obtuse.



a. $\angle AOB$ 35°, acute

b. $\angle AOC$ 65°, acute

c. $\angle BOC$ 30°, acute

d. $\angle BOE$ 110°, obtuse

e. $\angle COE$ 80°, acute

f. $\angle COD$ 45°, acute

g. $\angle BOD$ 75°, acute

h. $\angle AOE$ 145°, obtuse

i. Any right angles? No

j. Any bisected angles? No

l. Any congruent angles?
$\angle AOB \cong \angle EOD$
$m\angle AOB = m\angle EOD$

k. Draw $\overrightarrow{OY}$ that bisects $\angle COB$.

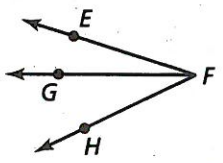
$m\angle BOY = 15°$
$m\angle COY = 15°$
$m\angle BOC = 30°$

Name _____ Date _____

1.5 Notetaking with Vocabulary (continued)

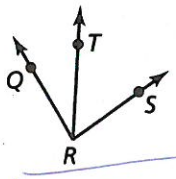
Extra Practice

In Exercises 1–3, name three different angles in the diagram.

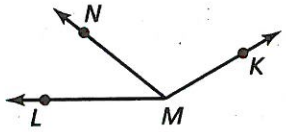
1. 

∠EFG, ∠GFH, ∠EFH

∠F same but risky!

2. 

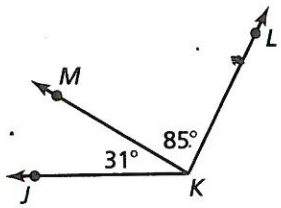
∠QRT, ∠QRS, ∠TRS

3. 

∠LMN, ∠NMK, ∠LMK

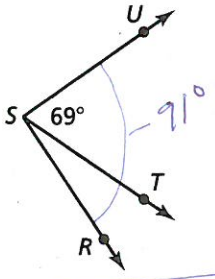
In Exercises 4–9, find the indicated angle measure(s).

4. Find $m\angle JKL$.



m∠JKL = 116°

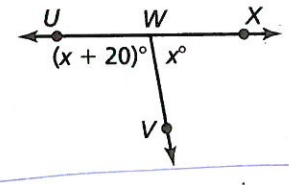
5. $m\angle RSU = 91°$. Find $m\angle RST$.



91°

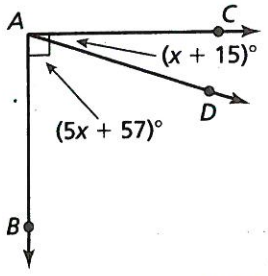
m∠RST = 22°

6. $\angle UWX$ is a straight angle. Find $m\angle UWV$ and $m\angle XWV$.



m∠UWV = 100°
m∠XWV = 80°

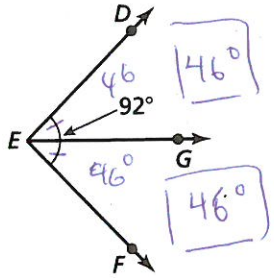
7. Find $m\angle CAD$ and $m\angle BAD$.



∠BAD + ∠CAD = ∠BAC
m∠BAD + m∠CAD = m∠BAC
(x + 15) + (5x + 57) = 90°
6x + 72 = 90
x = 3

m∠CAD = 18°
m∠BAD = 72°

8. $\overline{EG}$ bisects $\angle DEF$. Find $m\angle DEG$ and $m\angle GEF$.

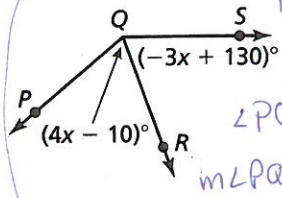


46°

46°

9. $\overline{QR}$ bisects $\angle PQS$. Find $m\angle PQR$ and $m\angle PQS$.

m∠PQR = 70°
m∠PQS = 140°



∠PQR + ∠SQR = ∠PQS
m∠PQR + m∠SQR = m∠PQS
(4x − 10) + (−3x + 130) = ??

Doesn't help us.

∠PQR ≅ ∠SQR
m∠PQR = m∠SQR
4x − 10 = −3x + 130
7x = 140 x = 20