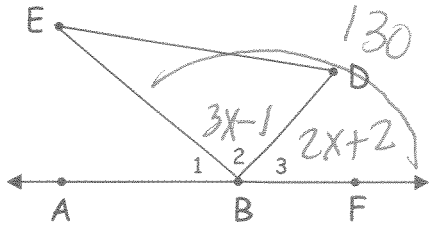
Geometry Practice 1-5

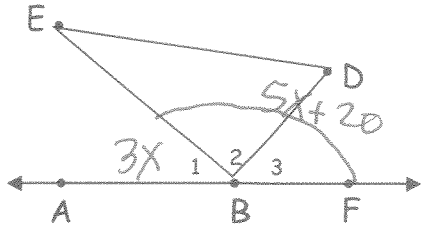
Name Master E

1. 53.6° If $m\angle EBD = (3x - 1)°$, $m\angle DBF = (2x + 2)°$, and $m\angle EBF = 130°$, find $m\angle DBF$.



$3x-1+2x+2=130$
$5x+1=130$
$5x=129$
$x=25.8$
$2(25.8)+2$

2. 120° If $m\angle ABE = 3x°$ and $m\angle EBF = (5x + 20)°$, find $m\angle EBF$.



$3x+5x+20=180$
$8x+20=180$
$8x=160$
$x=20$
$5(20)+20$

For # 3-5, use the coordinates A(0,4), B(2,0), C(6,10), and D(-8,-) to solve each problem.

3. (3,7)=M The coordinates of the midpoint (M) of $\overline{AC}$.

$\left(\frac{0+6}{2}, \frac{4+10}{2}\right) = \left(\frac{6}{2}, \frac{14}{2}\right)$

4. $3\sqrt{2}$ Find the distance of AM.

$\sqrt{(0-3)^2+(4-7)^2}$
$\sqrt{(-3)^2+(-3)^2} = \sqrt{9+9} = \sqrt{18} = \sqrt{9}\cdot\sqrt{2}$
$3\sqrt{2}$

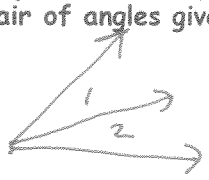
5. $3\sqrt{2}$ Find the distance of MC.

$\sqrt{(6-3)^2+(10-7)^2}$
$\sqrt{(3)^2+(3)^2} = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2}$

If M is the midpt. of $\overline{AC}$, then AM = MC!

Draw a picture of each pair of angles given.

6. Adjacent angles



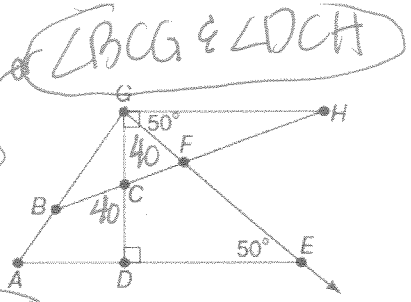
7. Obtuse angle

8. Complementary angles

9. Linear pair

10. Vertical angles

Name an angle or angle pair that satisfies each condition.



1. Name two obtuse vertical angles. ∠GFH & ∠BFE

2. Name a linear pair with vertex B. ∠GBC & ∠CBA

3. Name an angle not adjacent to, but complementary to $\angle FGC$. $\angle FGC = 40°$ ∠FED b/c ∠HGF is complementary to ∠FGC & = 50°

4. Name an angle adjacent and supplementary to $\angle DCB$. ∠BCG or ∠DCF

5. **ALGEBRA** Two angles are complementary. The measure of one angle is 21 more than twice the measure of the other angle. Find the measures of the angles.

$x + 2x + 21 = 90$
$3x + 21 = 90$
$3x = 69 \Rightarrow x = 23$

$x = 23$
$2(23) + 21 = 67$

23° & 67°

6. **ALGEBRA** If a supplement of an angle has a measure 78 less than the measure of the angle, what are the measures of the angles?

x / $x - 78$

$x + x - 78 = 180$
$2x - 78 = 180$
$2x = 258 \Rightarrow x = 129$

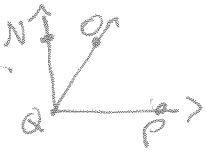
$129 - 78 = 51$

129° & 51°

Determine whether each statement can be assumed from the figure. Explain.

7. $\angle NQO$ and $\angle OQP$ are complementary.

No—there is no right ∠ drawn.

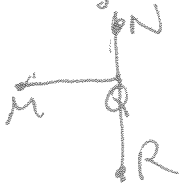


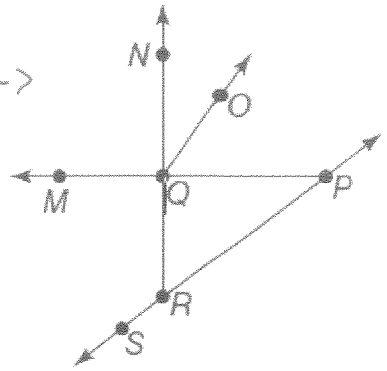
8. $\angle SRQ$ and $\angle QRP$ is a linear pair.

Yes b/c S, R, & P are collinear!

9. $\angle MQN$ and $\angle MQR$ are vertical angles.

No b/c they are an adjacent linear pair!





10. **STREET MAPS** Darren sketched a map of the cross streets nearest to his home for his friend Miguel. Describe two different angle relationships between the streets.

Beacon & Olive are adjacent angles
Olive & Main are adjacent angles, but they are also complementary.