Acc. Geometry
1.5 Day 2 Notes

Name_____

Date_____

Draw a picture write an equation and solve. + to 90°

EX1 Find the measures of two complementary angles if the difference in their measures is 18°.

Subtraction

$\angle 1 + \angle 2 = 90$

$\angle 1 - \angle 2 = 18$

$\angle 1 - \angle 2 = 18°$

$x - y = 18$

Elimination

$2\angle 1 = 108$

$\angle 1 = 54°$

$\angle 2 = 36°$

Ex2 If a supplement (= 180°) of an angle has a measure 78 less than the measure of the angle, what are the measures of the angles.

Subtraction

$\angle 1 + \angle 2 = 180$

$\angle 1 = \angle 2 - 78$

Substitution

$\angle 2 - 78 + \angle 2 = 180$

$2\angle 2 = 258$

$\angle 2 = 129°$

$\angle 1 = 51°$

Ex3 Find the measures of two angles that form a linear pair (180°), if the measure of one angle is 24° more than the other.

addition

$\angle 2 + 24 = \angle 1$

$\angle 1 + \angle 2 = 180$

Substitution

$\angle 2 + 24 + \angle 2 = 180°$

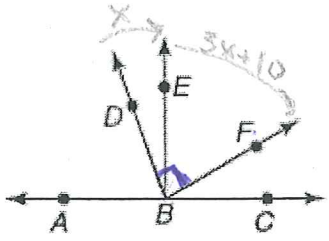
$2\angle 2 = 156$

$\angle 2 = 78°$

$\angle 1 = 102°$

Ex4

If $m\angle EBF = 3x + 10$, $m\angle DBE = x$, and $\overrightarrow{BD} \perp \overrightarrow{BF}$, find $m\angle EBF$.



right ∠

$\angle DBE + \angle EBF = \angle DBF$ Angle Addition

$\angle EBF + \angle DBE = 90°$ ($\angle DBF = 90$ Def of ⊥) Substitution

$3x + 10 + x = 90$ Substitution

$4x + 10 = 90$ Substitution (CLT)

$4x = 80$ Subtraction

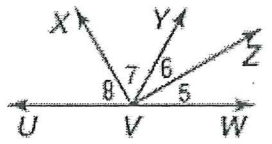
$x = 20$ Division

$\angle EBF = 3x + 10$

$\angle EBF = 70°$

Ex5

Find the $m\angle 7$.



$m\angle 5 = 5x, m\angle 6 = 4x + 6,$
$m\angle 7 = 10x,$
$m\angle 8 = 12x - 12$

$\angle 5 + \angle 6 + \angle 7 + \angle 8 = 180°$ Angle $\angle$ to straight $\angle$

$31x - 6 = 180°$ Substitution

$31x = 186$ Addition

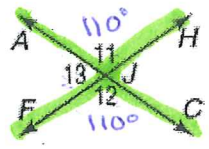
$x = 6$ Division

$\angle 7 = 10x$

$\angle 7 = 60°$

Ex6

Find the measure of each numbered angle.



$m\angle 11 = 11x,$
$m\angle 12 = 10x + 10$

$\angle 11 = \angle 12$ Vertical $\angle$s are $\cong$

$11x = 10x + 10$ Substitution

$x = 10$ Subtraction

$\angle 11 = 11x = 11(10) = 110°$

$\angle 12 = 10x + 10 = 10(10) + 10 = 110°$

$\angle 13 = 70°$

EX7 Find the measures of two complementary angles if the difference in their measures is 18°.

pg 45

15-33 odd

36-40

Ex8 If a supplement of an ang e angle, what are the measures of the angles?

Ex9 Find the measures of two angles that form a linear pair, if the measure of one angle is 24° more than the other.