10/24/07 Objective: TSWBAT- use equations to solve problems involving.

Angles 1 and 2 are complementary. Find x from the values given in Exercises 1–5.

1. $m\angle 1 = x + 3$; $m\angle 2 = 3x - 1$ _____

$x+3+3x-1=90$

$4x+2=90$

$-2 \quad -2$

$\frac{4x}{4} = \frac{88}{4}$

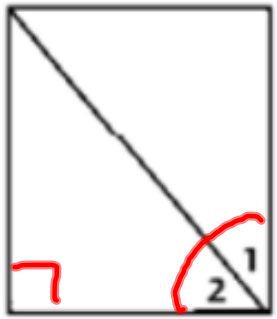
$x = 22$

$m\angle 1 = (22)+3$

25°

$m\angle 2 = 3(22)-1$

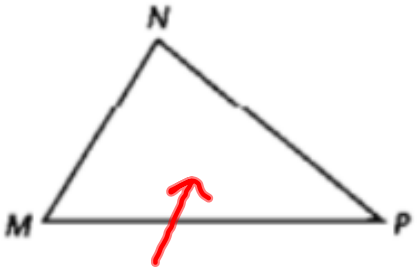
65°



right angle = 90°

Find the measures of the angles of triangle *MNP*.

6. $m\angle M = 3x + 16$; $m\angle N = 5x$; $m\angle P = 2x - 6$



$3x + 16 + 5x + 2x - 6 = 180$

$10x + 10 = 180$

$-10 \quad -10$

$\frac{10x}{10} = \frac{170}{10}$

$x = 17$

sum of angles is 180°

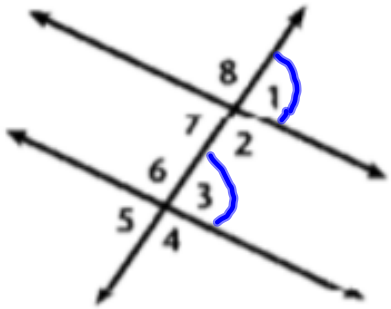
$m\angle M = 3(17) + 16 = 67^\circ$

$m\angle N = 5(17) = 85^\circ$

$m\angle P = 2(17) - 6 = 28^\circ$

Using the figure at the right, find x and the measures of the indicated angles from the information given in Exercises 10–13.

10. $m\angle 1 = 3x - 2$; $m\angle 3 = 4x - 10$



$3x - 2 = 4x - 10$

$-3x \quad -3x$

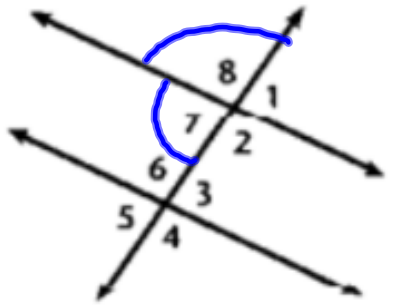
$-2 = x - 10$

$+2 \quad +2$

0

$x = -8$

$m\angle 1 = m\angle 3$



12. $m\angle 7 = 4x - 6$; $m\angle 8 = 5x - 3$

$m\angle 7 + m\angle 8 = 180$
complementary angles

$4x-6+5x-3=180$

$9x-9=180$

$+9 \quad +9$

$0 \quad 189$

$\frac{9x}{9} = \frac{189}{9}$

$x = 21$

$m\angle 7 = 4(21)-6 = 78^\circ$

$m\angle 8 = 5(21)-3 = 102^\circ$