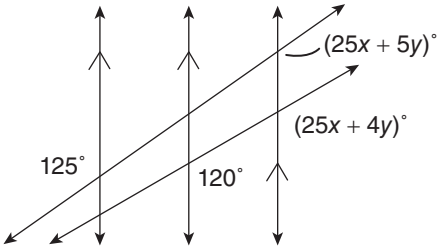
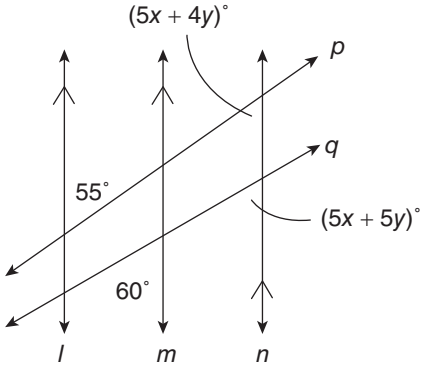
Parallel Lines and Angles
Ticket-Out-the-Door Answer Key

1.–4. Find x and y in the diagrams.

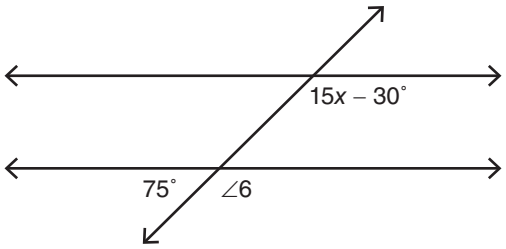




$x =$ 4 $y =$ 5 $x =$ 7 $y =$ 5

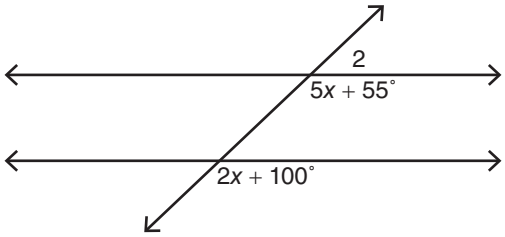
5. The following diagram shows parallel lines cut by a transversal. What is the value of x?

$x =$ 9



6. The following diagram shows parallel lines cut by a transversal. What is the value of $\angle 2$?

$\angle 2 =$ 50°



7. Write which theorem or postulate that is related to the measures of the angles in each pair.

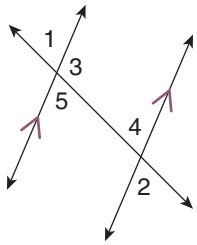
Then find the angle measures.

$m\angle 1 = (7x + 15)°$, $m\angle 2 = (10x - 9)°$ Alt. Ext. ∠ Thm.

$m\angle 1 =$ 71° , $m\angle 2 =$ 71° , $x =$ 8

$m\angle 3 = (23x + 11)°$, $m\angle 4 = (14x + 21)°$ Same-Side Int. ∠ Thm.

$m\angle 3 =$ 103° , $m\angle 4 =$ 77° , $x =$ 4



$m\angle 4 = (37x - 15)°$, $m\angle 2 = (44x - 29)°$ Alt. Int. ∠ Thm.

$m\angle 4 =$ 59° , $m\angle 2 =$ 59° , $x =$ 2

$m\angle 1 = (6x + 24)°$, $m\angle 2 = (17x - 9)°$ Corr. ∠ Post.

$m\angle 1 =$ 42° , $m\angle 2 =$ 42° , $x =$ 3