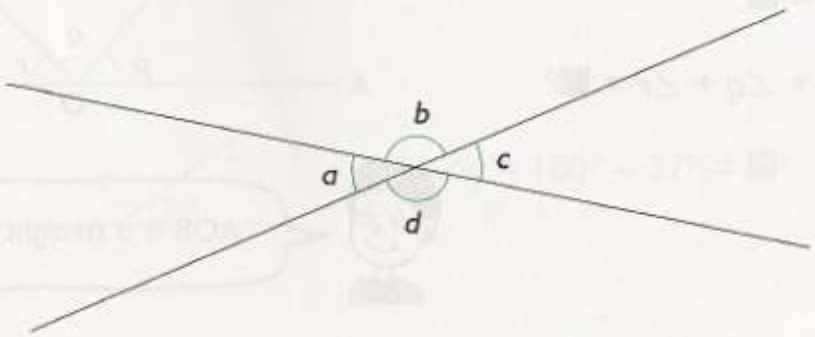
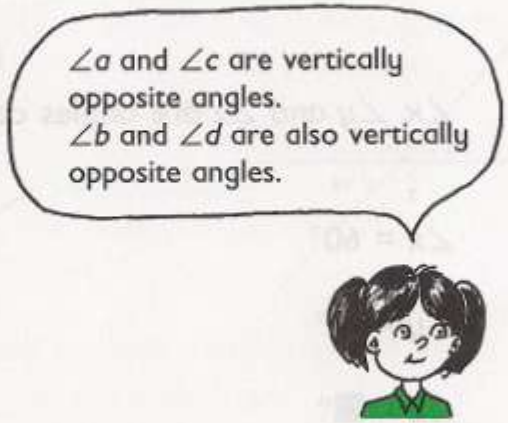
2 Finding Unknown Angles

When two straight lines cross, they form two pairs of **vertically opposite angles**.



Measure the unknown angles.



$\angle a = 34°$

$\angle b = \blacksquare°$

$\angle c = \blacksquare°$

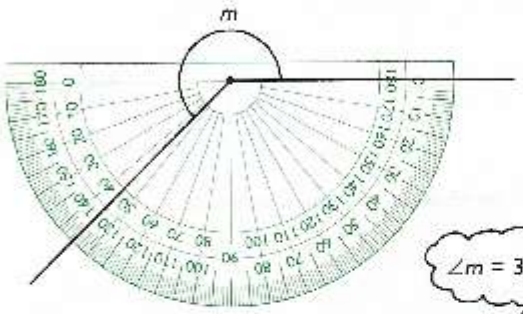
$\angle d = \blacksquare°$

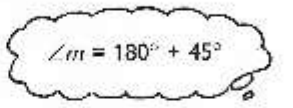
Vertically opposite angles are equal.

6 Angles

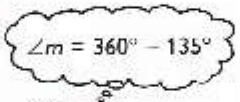
1 Measuring Angles

What is the size of $\angle m$?



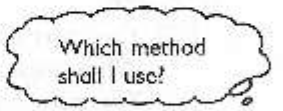


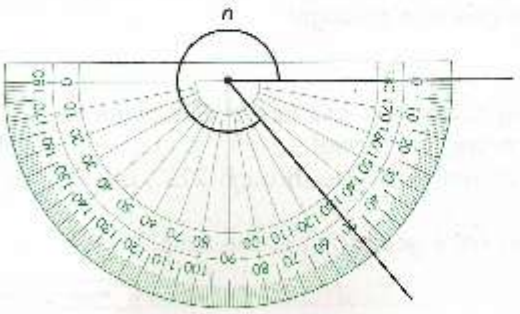
John



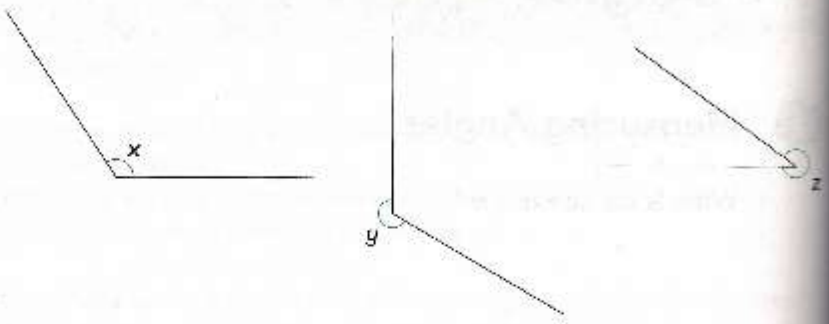
Nancy

Measure $\angle n$.



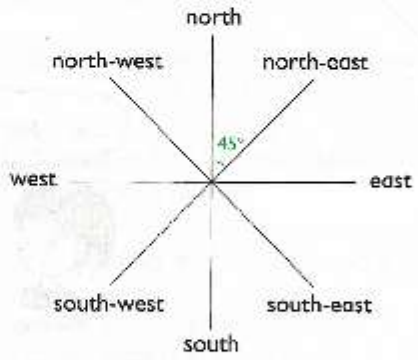


1. Estimate and then find each of the following marked angles by measurement.



Workbook exercise 39

2.



(a) You start facing **north** and turn clockwise to **south-east**.
What angle do you turn through?

(b) You start facing **west** and turn counterclockwise to **south-west**.
What angle do you turn through?

3. (a) You start facing north-west and turn clockwise through 90°.
Which direction are you facing?

(b) After turning counterclockwise through 225°, you end up facing east.
Which direction were you facing at the start?

Workbook Exercise 40

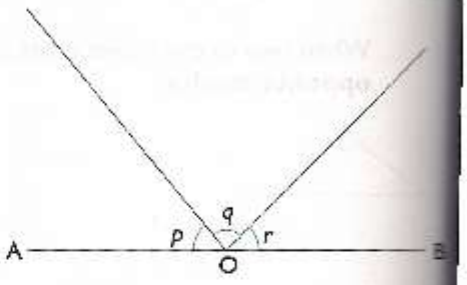
$\angle p$, $\angle q$ and $\angle r$ are angles on a straight line. Measure the unknown angles.

$\angle p = 50°$

$\angle q =$ ■°

$\angle r =$ ■°

$\angle p + \angle q + \angle r =$ ■°



AOB is a straight line.

The sum of the angles on a straight line is 180°.

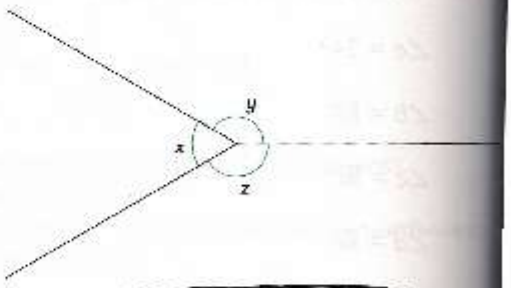
$\angle x$, $\angle y$ and $\angle z$ are angles at a point. Measure the unknown angles.

$\angle x = 60°$

$\angle y =$ ■°

$\angle z =$ ■°

$\angle x + \angle y + \angle z =$ ■°

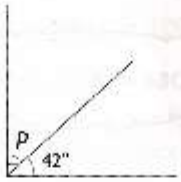


The 3 marked angles meet at a common point.

The sum of the angles at a point is 360°.

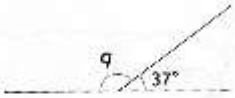
1. Find the unknown marked angle in each of the following:

(a)



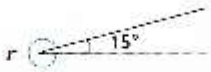
$\angle p = 90° - 42° =$ ■°

(b)



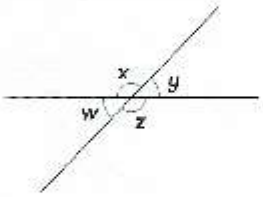
$\angle q = 180° - 37° =$ ■°

(c)

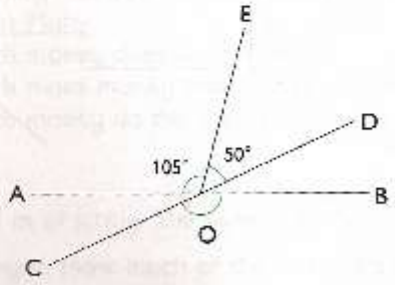


$\angle r = 360° - 15° =$ ■°

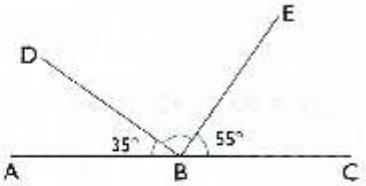
2. The figure shows 4 angles formed by two straight lines.
If $\angle w = 46°$, find $\angle x$, $\angle y$ and $\angle z$.

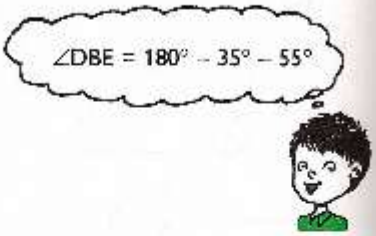


3. In the figure, AOB and COD are straight lines. Find $\angle$COB.

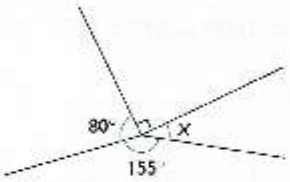


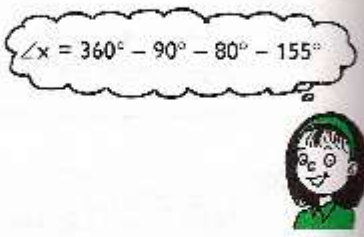
4. In the figure, ABC is a straight line. $\angle ABD = 35°$ and $\angle EBC = 55°$. Find $\angle DBE$.



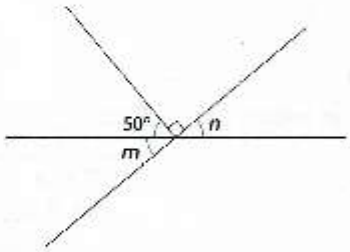


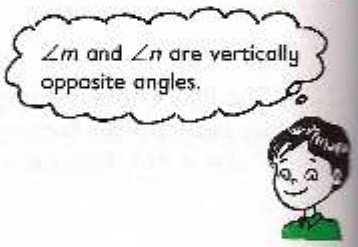
5. In the figure, find $\angle x$.



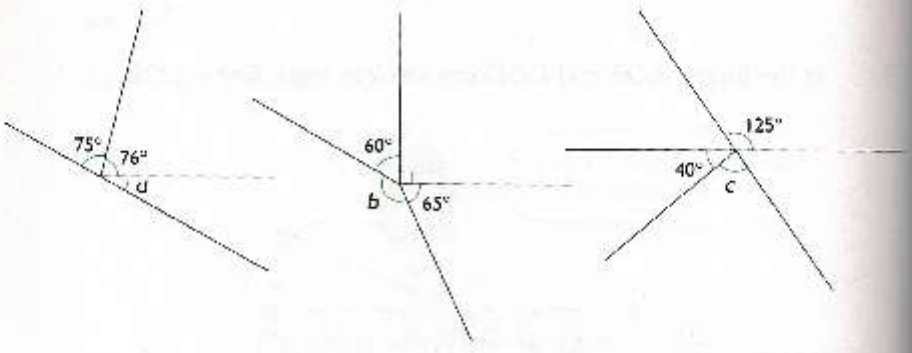


6. In the figure, find $\angle m$ and $\angle n$.





7. Find the unknown marked angles.



Workbook Exercise 41