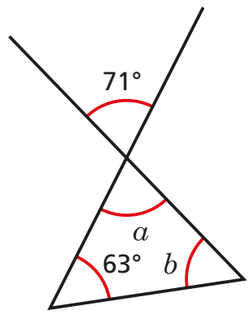
# Solve complex angle problems

**1** Work out the sizes of the unknown angles.

Give reasons for each stage of your working.

**a)**



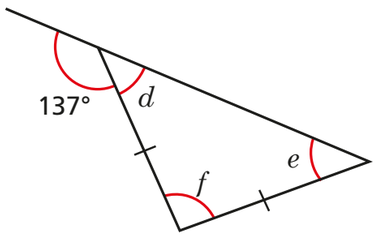

$a$ = ☐ because _____

_____

$b$ = ☐ because _____

_____

**b)**




$d$ = ☐ because _____

_____

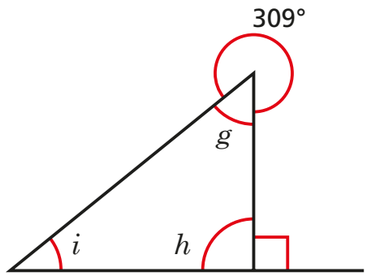
$e$ = ☐ because _____

_____

$f$ = ☐ because _____

_____

**c)**




$g$ = ☐ because _____

_____

$h$ = ☐ because _____

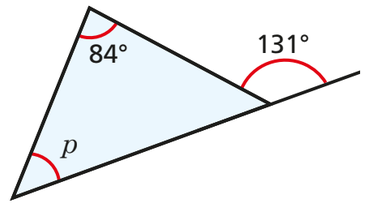
_____

$i$ = ☐ because _____

_____

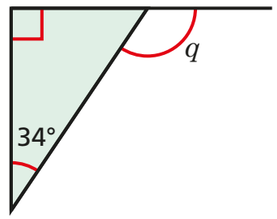
**2** Work out the sizes of the unknown angles.

**a)**



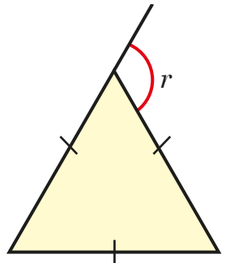

$p$ = ☐

**b)**



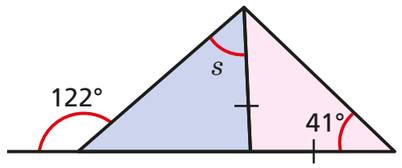

$q$ = ☐

**c)**



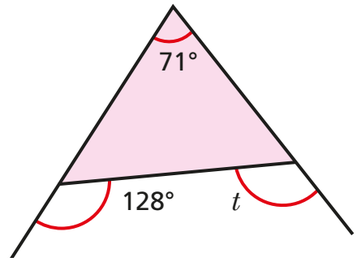

$r$ = ☐

**d)**



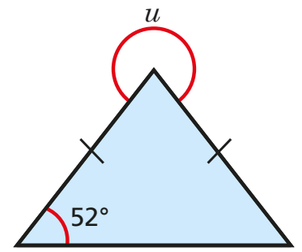

$s$ = ☐

**e)**



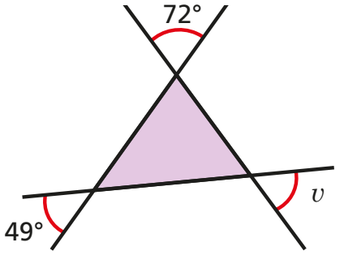

$t$ = ☐

**f)**



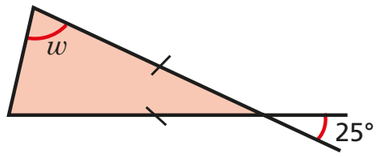

$u$ = ☐

**g)**




$v$ = ☐

**h)**

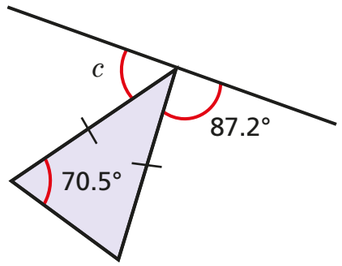



$w$ = ☐

Talk about your reasons with a partner.

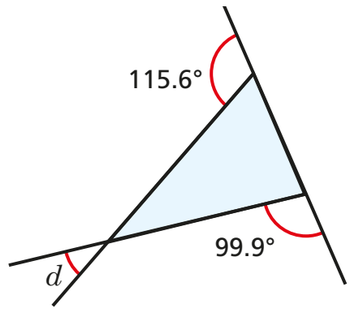
**3** Work out the sizes of the unknown angles.

**a)**



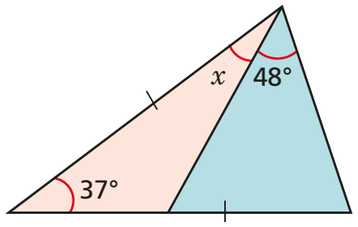

$c$ = ☐

**b)**




$d$ = ☐

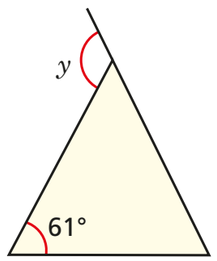
**4** Work out the size of angle $x$.




$x$ = ☐

**5** Here is an isosceles triangle.

Find two possible sizes of angle $y$.

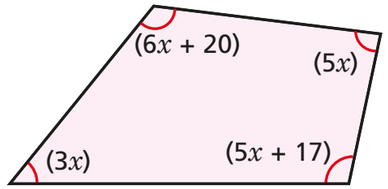



$y$ = ☐ or ☐

**6** Form and solve equations to work out the value of $x$ in each diagram.

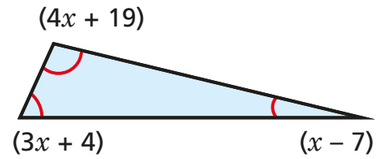
Show each step of your workings.

**a)**



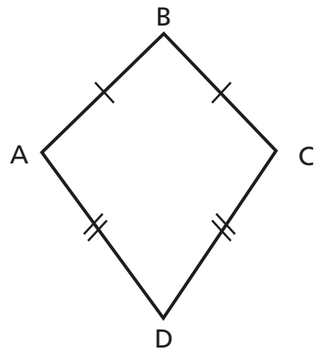

$x$ = ☐

**b)**




$x$ = ☐

**7** ABCD is a kite.




**a)** Estimate the size of each angle in the kite.

∠ABC = ☐ ∠BCD = ☐

∠CDA = ☐ ∠DAB = ☐

**b)** Given that $p = 20$, write a possible expression for the size of each angle in terms of $p$.

∠ABC = _____ ∠BCD = _____

∠CDA = _____ ∠DAB = _____

Compare answers with a partner.