Exercise 17C

Q1

Answer :

$\left(\mathrm{c}\right)\ 135^{\circ}$

$$\begin{aligned}\text{Supplement of } 45^{\circ} &= 180^{\circ} - 45^{\circ} \\ &= 135^{\circ}\end{aligned}$$

Q2

Answer :

$\left(\mathrm{b}\right)\ 10^{\circ}$

$$\begin{aligned}\text{Complement of } 80^{\circ} &= 90^{\circ} - 80^{\circ} \\ &= \mathbf{10^{\circ}}\end{aligned}$$

Q3

Answer :

(b)45°

Suppose the angle is x°.

Then, the complement is also x°.

Complement of $x^{\circ} = 90^{\circ} - x^{\circ}$

$\Rightarrow x^{\circ} = 90^{\circ} - x^{\circ}$

$\Rightarrow x^{\circ} + x^{\circ} = 90^{\circ}$

$\Rightarrow 2x^{\circ} = 90^{\circ}$

$\Rightarrow x = \frac{90}{2}$

$\Rightarrow x = 45$

Q4

Answer :

$\left(a\right)\ 30^{\circ}$

Suppose the angle is x.

$x = \frac{(180 - x)}{5}$

$\Rightarrow 5x = 180 - x$

$\Rightarrow 5x + x = 180$

$\Rightarrow x = \frac{180}{6}$

$\Rightarrow x = 30^{\circ}$

Q5

Answer :

$\left(b\right)\ 57^{\circ}$

Suppose the angle is x.

$x = 90 - x + 24$

$\Rightarrow x + x = 114$

$\Rightarrow 2x = 114$

$\Rightarrow x = \frac{114}{2}$

$\Rightarrow x = 57^{\circ}$

Q6

Answer :

$\left(b\right)\ 74^{\circ}$

Suppose the angle is x.

$x = 180 - x - 32$

$\Rightarrow x + x = 148$

$\Rightarrow 2x = 148$

$\Rightarrow x = \frac{148}{2}$

$\Rightarrow x = 74^\circ$

Q7

Answer :

$(c)\ 72^\circ$

Supplementary angles:

$3x + 2x = 180$

$=> x = \frac{180}{5}$

$\Rightarrow x = 36^\circ$

Smaller angle $= (2 \times 36^\circ)$

$= 72^\circ$

Q8

Answer :

$(b)\ 48^\circ$

$\angle AOC + \angle BOC = 180^\circ$ (linear pair)

$\angle AOC = 180^\circ - \angle BOC$

$= 180^\circ - 132^\circ$

$= 48^\circ$

Q9

Answer :

$(\mathbf{x})\ 112$

$\angle AOC + \angle AOB = 180^\circ \quad (\text{linear pair})$

$68^\circ + \mathbf{x}^\circ = 180^\circ$

$\Rightarrow \boldsymbol{x}^\circ = 180^\circ - 68^\circ$

$\Rightarrow \boldsymbol{x}^\circ = 112^\circ$

Q10

Answer :

$(\mathbf{c})\boldsymbol{x} = 35$

$(2\boldsymbol{x} - 10) + (3\boldsymbol{x} + 15) = 180$

$=> 2\boldsymbol{x} - 10 + 3\boldsymbol{x} + 15 = 180$

$=> 5\boldsymbol{x} + 5 = 180$

$=> 5\boldsymbol{x} = 180 - 5$

$=> 5\boldsymbol{x} = 175$

$=> \boldsymbol{x} = \frac{\cancel{175}^{35}}{\cancel{5}^{1}}$

$=> \boldsymbol{x} = 35$

Q11

Answer :

$(d)\ \boldsymbol{x} = 80$

$\boldsymbol{x} + 55 + 45 = 180\ (\text{linear pair})$

$\Rightarrow \mathbf{x} = 180 - 55 - 45$

$\Rightarrow \mathbf{x} = 180 - 100$

$\Rightarrow \mathbf{x} = 80$

********** END **********