

Angles

Types of Angles

LI

- Know the different angle types.
- Calculate angles and state their types.

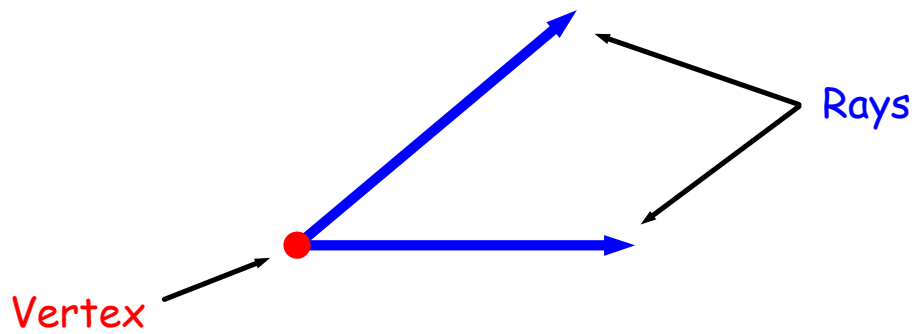
SC

- $+$, $-$ numbers.

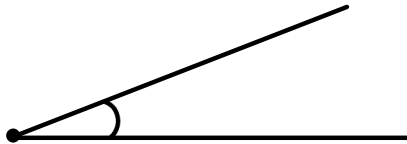
Literacy Link :

The word '**angle**' comes from the
Latin word 'angulus' (**corner**)

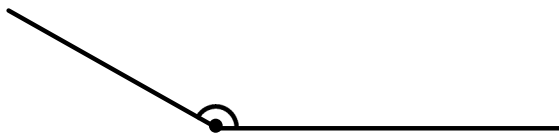
An **angle** is the shape made by 2 lines ('rays') coming out from a vertex ('corner')



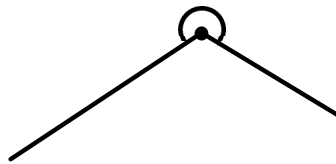
Types of Angles

Acute

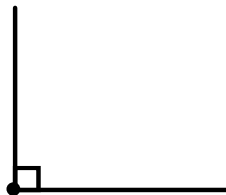
Strictly between
 0° and 90°

Obtuse

Strictly between
 90° and 180°

Reflex

Strictly between
 180° and 360°

Right Angle

Exactly 90°

Straight Angle

Exactly 180°

Full Turn

Exactly 360°

Example 1

What type of angle is this ?

$$23^{\circ} + 54^{\circ}$$

$$\begin{array}{r} 23^{\circ} \\ + 54^{\circ} \\ \hline 77^{\circ} \end{array}$$

77° : Acute

Example 2

What type of angle is this ?

$$217^{\circ} - 25^{\circ}$$

$$\begin{array}{r} \overset{1}{\cancel{2}} \overset{1}{1} 7^{\circ} \\ - \quad 25^{\circ} \\ \hline 192^{\circ} \end{array}$$

192° : Reflex

Example 3

What type of angle is this ?

$$56 . 4^{\circ} + 33 . 6^{\circ}$$

$$\begin{array}{r} 56 . 4^{\circ} \\ + 33 . 6^{\circ} \\ \hline 90 . 0^{\circ} \\ \hline \end{array}$$

1 1

90° : Right

Work out the answer to each angle sum below and state what type of angle the answer is.

- | | |
|----------------------------|-----------------------------------|
| 1) $55^\circ + 27^\circ$ | 11) $33.6^\circ + 146.4^\circ$ |
| 2) $132^\circ + 58^\circ$ | 12) $316.7^\circ - 270^\circ$ |
| 3) $115^\circ - 25^\circ$ | 13) $136.8^\circ + 42.2^\circ$ |
| 4) $257^\circ - 60^\circ$ | 14) $360^\circ - 270.1^\circ$ |
| 5) $192^\circ + 168^\circ$ | 15) $192.4^\circ + 167.6^\circ$ |
| 6) $176^\circ - 86^\circ$ | 16) $204.3^\circ - 180.4^\circ$ |
| 7) $116^\circ - 25^\circ$ | 17) $0.01^\circ + 179.1^\circ$ |
| 8) $165^\circ - 98^\circ$ | 18) $249.5^\circ + 110.5^\circ$ |
| 9) $76^\circ + 104^\circ$ | 19) $360^\circ - 180.1^\circ$ |
| 10) $357^\circ - 68^\circ$ | 20) $178.43^\circ + 181.56^\circ$ |

Answers

- | | | | |
|----------------------------|-------------------------|---|-------------------------------|
| 1) $55^\circ + 27^\circ$ | 82° , acute | 11) $33 \cdot 6^\circ + 146 \cdot 4^\circ$ | 180° , straight |
| 2) $132^\circ + 58^\circ$ | 190° , reflex | 12) $316 \cdot 7^\circ - 270^\circ$ | $46 \cdot 7^\circ$, acute |
| 3) $115^\circ - 25^\circ$ | 90° , right | 13) $136 \cdot 8^\circ + 42 \cdot 2^\circ$ | 179° , obtuse |
| 4) $257^\circ - 60^\circ$ | 197° , reflex | 14) $360^\circ - 270 \cdot 1^\circ$ | $89 \cdot 9^\circ$, acute |
| 5) $192^\circ + 168^\circ$ | 360° , full turn | 15) $192 \cdot 4^\circ + 167 \cdot 6^\circ$ | 360° , full turn |
| 6) $176^\circ - 86^\circ$ | 90° , right | 16) $204 \cdot 3^\circ - 180 \cdot 4^\circ$ | $23 \cdot 9^\circ$, acute |
| 7) $116^\circ - 25^\circ$ | 91° , obtuse | 17) $0 \cdot 01^\circ + 179 \cdot 1^\circ$ | $179 \cdot 11^\circ$, obtuse |
| 8) $165^\circ - 98^\circ$ | 67° , acute | 18) $249 \cdot 5^\circ + 110 \cdot 5^\circ$ | 360° , full turn |
| 9) $76^\circ + 104^\circ$ | 180° , straight | 19) $360^\circ - 180 \cdot 1^\circ$ | $179 \cdot 9^\circ$, obtuse |
| 10) $357^\circ - 68^\circ$ | 289° , reflex | 20) $178 \cdot 43^\circ + 181 \cdot 56^\circ$ | $359 \cdot 99^\circ$, reflex |

R E C A P

- 1) How many 90° angles add up to make a full turn ?
- 2) How many 15° angles add up to make a right angle ?
- 3) What is the smallest number of 10° angles needed to make a reflex angle ?

H O M E W O R K

What type of angle is this ?

$$165.898989^\circ + 14.100011^\circ$$

H O M E W O R K

What type of angle is this ?

$$165 . 898\ 989^{\circ} + 14 . 100\ 011^{\circ}$$

$$\begin{array}{r}
 165 . 898\ 989^{\circ} \\
 + \quad 14 . 100\ 011^{\circ} \\
 \hline
 179 . 999\ 000^{\circ} \\
 \hline
 \quad \quad \quad 1\ 1\ 1
 \end{array}$$

$179 . 999^{\circ}$: Obtuse