

Perpendicular Lines, Complementary, Supplementary, and Right Angles

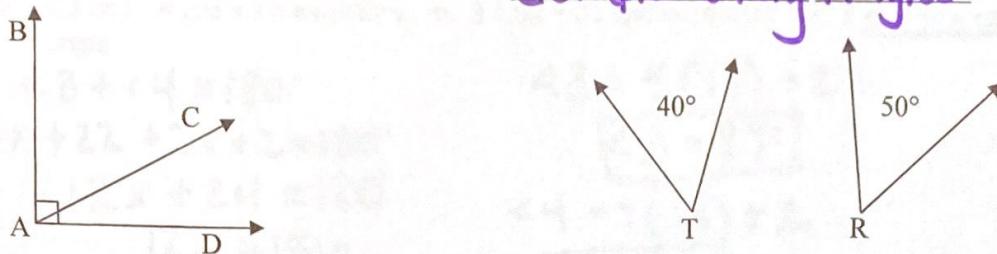
Practice #4 Day 1

Key

Two angles whose measures add up to 180° are called Supplementary Angles.

They can also be called a linear pair if together they form a straight angle.

Two angles whose measures add up to 90° are Complementary Angles.



In the diagram above, _____ and _____ are _____.

Use the figure on the right to name each of the following.

1. Name a pair of complementary angles.

$\angle LMQ$ and $\angle QMP$ are compl.

2. Name a pair of supplementary angles.

$\angle PMQ$ and $\angle QMN$ are suppl. etc...

$\angle LMN$ and $\angle NMO$ are suppl.

3. Name a different pair of supplementary angles.

$\angle QML$ and $\angle QMO$ are suppl.

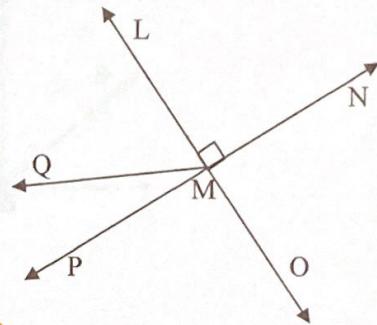
(there are many)

$\angle PMO$ and $\angle OMN$ are suppl.

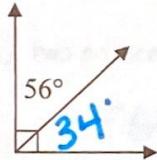
4. Name a linear pair.

$\angle PMQ$ and $\angle QMN$ are also linear pairs

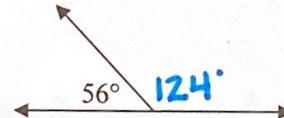
Find the measure of each angle



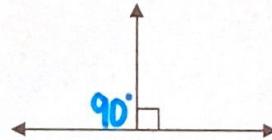
5.



6.



7.



8. Find the measure of each angle in the diagram.

$\angle DAB$ is a right angle

$\angle ADE$ is a right angle

$\angle 1 = 53^\circ$

$m\angle 1 = m\angle 12$

$\angle 3 = 55^\circ$

$\angle 5 = 88^\circ$

$m\angle 4 = m\angle 9$

$\angle ABE = 100^\circ$

$\angle DEB = 80^\circ$

$$\angle 1 = 53^\circ$$

$$\angle 2 = 42 + 53 = 90^\circ$$

$$\angle 2 = 37^\circ$$

$$\angle 3 = 55^\circ$$

$$\angle 4 = 42 + 55 = 90^\circ$$

$$\angle 4 = 35^\circ$$

$$\angle 5 = 88^\circ$$

$$\angle 6 = \text{linear pairs are suppl.}$$

$$\angle 6 = 92^\circ$$

$$\angle 7 = \text{vertical}$$

$$\angle 7 = 88^\circ$$

$$\angle 8 = \angle 3 = 92^\circ$$

$$\angle 9 = 35^\circ$$

$$\angle 10 = 100 - 35 = 65^\circ$$

$$\angle 11 = 80 - 53 = 27^\circ$$

$$\angle 11 = 27^\circ$$

$$\angle 12 = 53^\circ$$

$$\angle 13 = 55^\circ$$

$$\angle 14 = 35^\circ$$

$$\angle 15 = 88^\circ$$

$$\angle 16 = 92^\circ$$

$$\angle 17 = 88^\circ$$

$$\angle 18 = 92^\circ$$

$$\angle 19 = 35^\circ$$

$$\angle 20 = 65^\circ$$

$$\angle 21 = 53^\circ$$

$$\angle 22 = 12^\circ$$

$$\angle 23 = 12^\circ$$

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$$\angle 151 = 12^\circ$$

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$$\angle 153 = 12^\circ$$

9) $\angle 1$ and $\angle 2$ are complementary. $m\angle 1 = 2x + 7$ and $m\angle 2 = 4x - 19$. Find the measure of each angle.

$$\begin{aligned}\angle 1 + \angle 2 &= 90^\circ \quad \text{def of compl.} \\ 2x + 7 + 4x - 19 &= 90 \\ 6x - 12 &= 90 \\ 6x &= 102 \\ x &= 17\end{aligned}$$
$$\begin{aligned}m\angle 1 &= 2(17) + 7 \\ m\angle 1 &= 41^\circ \\ m\angle 2 &= 4(17) - 19 \\ m\angle 2 &= 49^\circ\end{aligned}$$

10) $\angle 3$ and $\angle 4$ are supplementary. $m\angle 3 = 5x + 22$ and $m\angle 4 = 7x + 2$. Find the measure of each angle.

$$\begin{aligned}\angle 3 + \angle 4 &= 180^\circ \\ 5x + 22 + 7x + 2 &= 180^\circ \\ 12x + 24 &= 180^\circ \\ 12x &= 156 \\ x &= 13\end{aligned}$$
$$\begin{aligned}m\angle 3 &= 5(13) + 22 \\ m\angle 3 &= 87^\circ \\ m\angle 4 &= 7(13) + 2 \\ m\angle 4 &= 93^\circ\end{aligned}$$

11) Use the diagram on the right to name:

a) two complementary angles

$\angle EGD$ and $\angle DGC$
are compl.

b) a linear pair

$\angle EGF$ and $\angle FGA$
are a linear pair

c) two adjacent angles

$\angle FGD$ and $\angle DGC$ are adjacent
but there are MANY
more ❤

