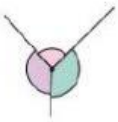
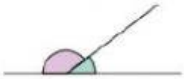
Angle Properties

7th Grade Worksheet



These angles are **angles at a point**.

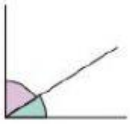
Angles at a point add to 360^o.



These angles are **angles on a line**.

Angles on a line add to 180^o.

Angles which add to 180^o are called **supplementary angles**.



These angles are **angles in a right angle**.

Angles in a right angle add to 90^o.

Angles which add to 90^o are called **complementary angles**.
Lines which meet at 90^o are said to be **perpendicular**.

Example 1

a Are angles with sizes 37^o and 53^o complementary?

b What angle size is the supplement of 48^o?

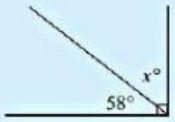
a $37^o + 53^o = 90^o$. So, the angles are complementary.

b The angle size is $180^o - 48^o = 132^o$.

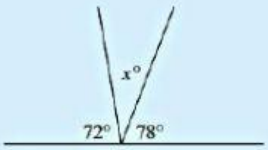
Example 2

Find the value of the unknown in:

a



b



a The angles 58^o and x^o are complementary.

$\therefore \quad x = 90 - 58$

$\therefore \quad x = 32$

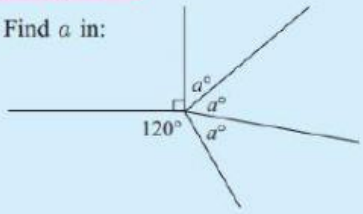
b The three angles add to 180^o

$\therefore \quad x = 180 - 72 - 78$

$\therefore \quad x = 30$

Example 3

Find a in:



The sum of the five angles is 360^o

$\therefore$ the three equal angles add to $360^o - 90^o - 120^o = 150^o$

So, each must be $150^o \div 3 = 50^o$

$\therefore \quad a = 50$.

LIVEWORKSHEETS

Exercise

1. Add the following pairs of angles and state whether they are complementary, supplementary, or neither:

   a 20^o, 70^o **b** 30^o, 150^o **c** 110^o, 40^o

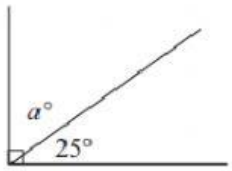
   d 47^o, 43^o **e** 107^o, 63^o **f** 35^o, 55^o

2. Find the size of the angle complementary to: **a** 30^o **b** 5^o **c** 85^o

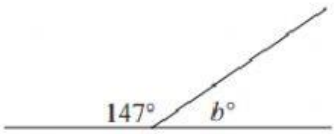
3. Find the size of the angle supplementary to: **a** 100^o **b** 5^o **c** 90^o

4. Find the value of the unknown in:

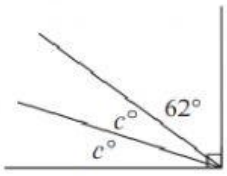
a



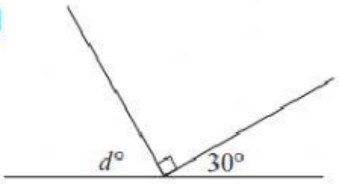
b



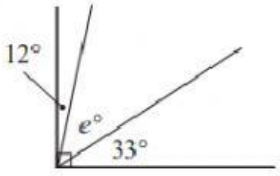
c



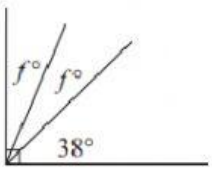
d



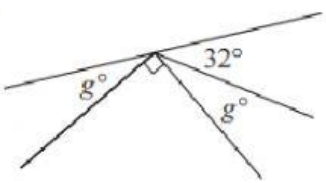
e



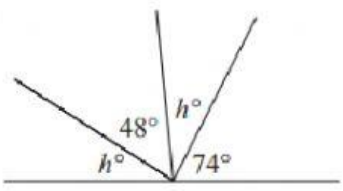
f



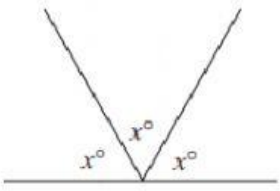
g



h



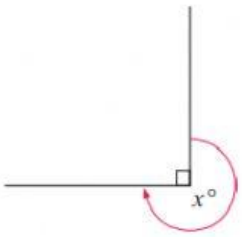
i



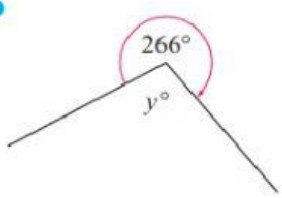
LIVEWORKSHEETS

5. Find the sizes of the unknown angles:

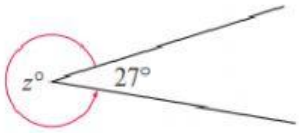
a



b

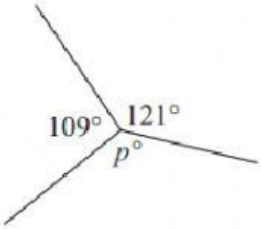


c

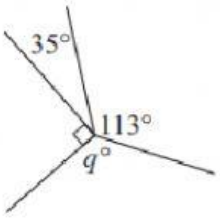


6. Find the values of the unknowns in:

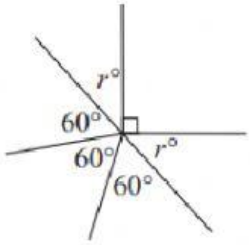
a



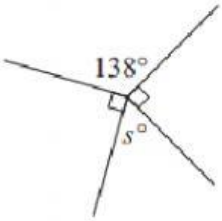
b



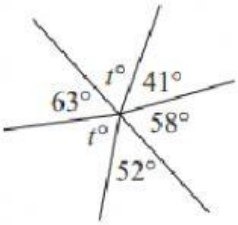
c



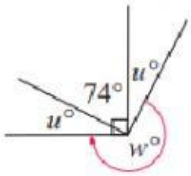
d



e



f



7. Copy and complete:

a the size of the complement of x^o is .....

b the size of the supplement of y^o is .....

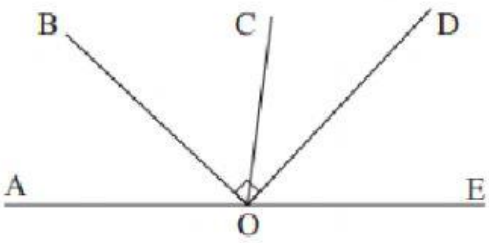
8. Classify the following angle pairs as complementary, supplementary or neither:

a $B\hat{O}C$ and $C\hat{O}D$

b $A\hat{O}C$ and $C\hat{O}E$

c $C\hat{O}D$ and $D\hat{O}E$

d $A\hat{O}B$ and $B\hat{O}E$



Acacademy
-It's a place to ace-

LIVEWORKSHEETS