

# Key answer worksheet 2

Name:

Worksheet(2)

Grade:7(A, B)

Subject : Math (Unit (6):Basic Geometry )

Complementary and Supplementary angles

Date :

90°

180°

$$x + x + 30 = 90$$

1

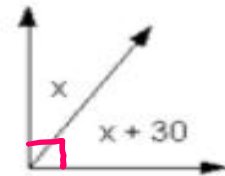
1. What is the value of x?

- (A) 90 degrees
- (B) 20 degrees
- (C) 30 degrees
- (D) 45 degrees

$$2x + 30 = 90$$

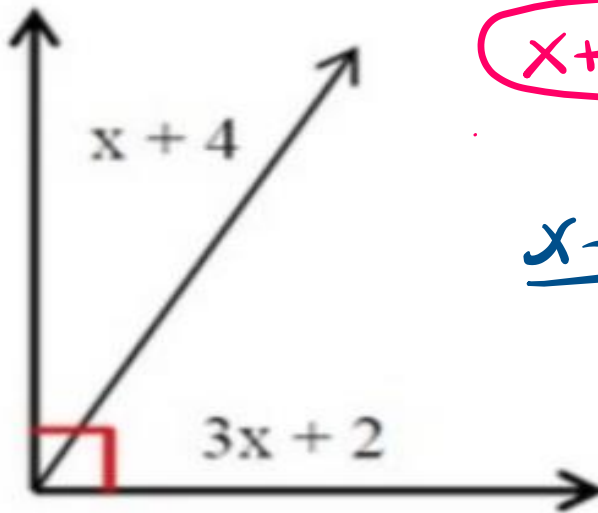
$$\begin{array}{r} -30 \quad -30 \\ \hline \end{array}$$

$$2x = 60 \rightarrow x = 30$$



Complementary زاوية متتامتان

2



$$x + 4 + 3x + 2 = 90$$

$$x + 4 + 3x + 2 = 90$$

$$4x + 6 = 90$$

$$4x + 6 = 90$$

$$\begin{array}{r} -6 \quad -6 \\ \hline \end{array}$$

$$\frac{4x}{4} = \frac{84}{4}$$

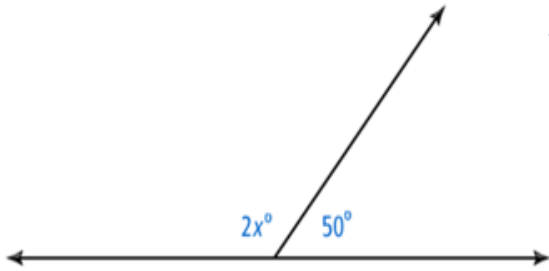
$$x = 21 \quad C$$

What is the value of x?

- (A) 84 degrees
- (B) 18 degrees
- (C) 21 degrees
- (D) 30 degrees



5

What is the value of  $x$ ?

Supplementary

$$2x + 50 = 180$$

$$2x + 50 = 180$$

$$\begin{array}{r} -50 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{130}{2}$$

$$x = 65$$

6

Find the value of  $x$ .

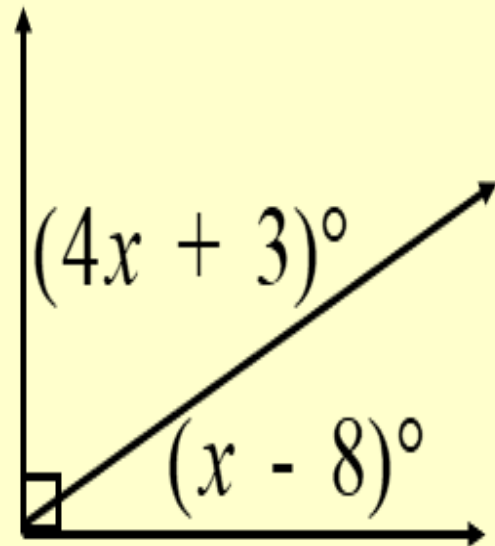
$$4x + 3 + x - 8 = 90$$

$$5x - 5 = 90$$

$$\begin{array}{r} +5 \\ \hline \end{array}$$

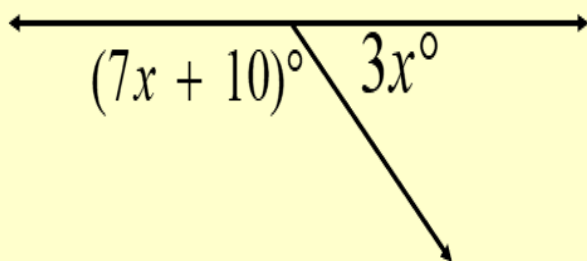
$$\frac{5x}{5} = \frac{95}{5}$$

$$x = 19$$



7

Find the value of x.



$$7x + 10 + 3x = 180$$

$$\cancel{10x + 10} = 180$$

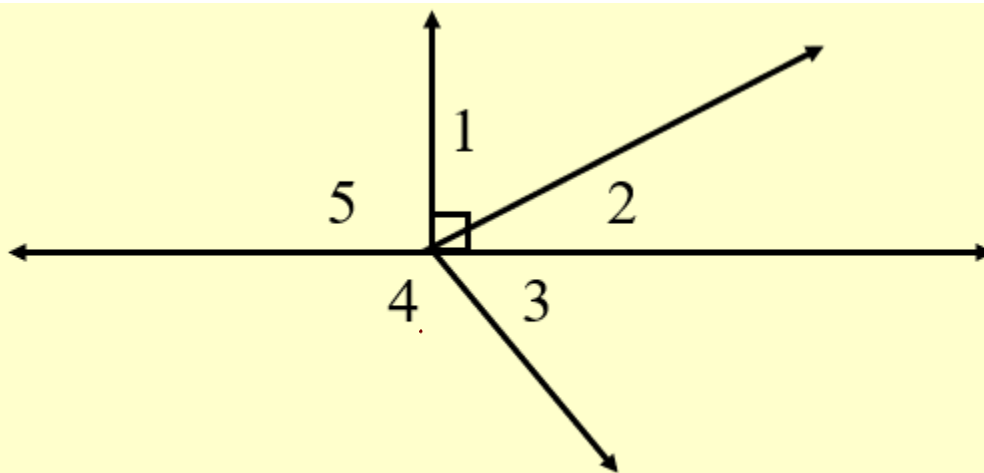
$\quad \quad \quad -10 \quad \quad -10$

$$\frac{10x}{10} = \frac{170}{10}$$

$$x = 17$$

8

Study the diagram below, then answer the questions :



Are angles 4 and 5 supplementary angles?

No

Are angles 2 and 3 complementary angles?

No

Are angles 4 and 3 supplementary angles?

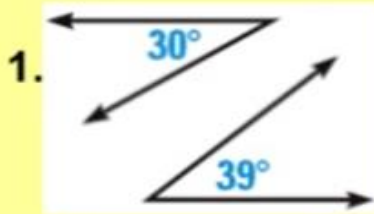
Yes

Are angles 2 and 1 complementary angles?

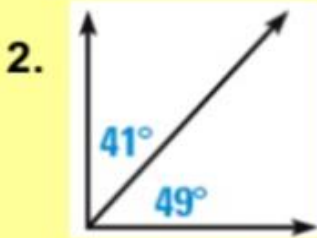
Yes

9

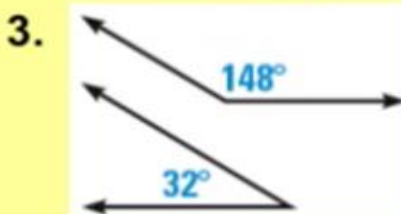
Determine whether the angles are complementary, supplementary, or neither.



$$30 + 39 = 69^\circ \text{ (neither)}$$



$$41 + 49 = 90^\circ \text{ (comp.)}$$



$$148 + 32 = 180^\circ \text{ (supp.)}$$

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قياس الزاوية  $\Leftarrow$  measure of angle

تغيب

a.  $\angle A$  is a complement of  $\angle C$ , and  $m\angle A = 47^\circ$ . Find  $m\angle C$ .

b.  $\angle P$  is a supplement of  $\angle R$ , and  $m\angle R = 36^\circ$ . Find  $m\angle P$ .

$$\angle A + \angle C = 90^\circ$$

$$\begin{array}{r} 47 + \angle C = 90 \\ -47 \\ \hline \angle C = 43 \end{array}$$

$$\boxed{\angle C = 43^\circ}$$

$$\angle P + \angle R = 180$$

$$\begin{array}{r} \angle P + 36 = 180 \\ -36 \\ \hline \angle P = 144 \end{array}$$

$$\boxed{\angle P = 144^\circ}$$

11

 $90^\circ$ 

Angles A and B are complementary angles,

if  $\sphericalangle A = (3.1x + 37.6)^\circ$  and  $\sphericalangle B = (2.4 + 9.4x)^\circ$ ,

find the value of  $x$ ???

$$\sphericalangle A + \sphericalangle B = 90^\circ$$

$$\underline{3.1x} + \underline{37.6} + \underline{2.4} + \underline{9.4x} = 90$$

$$12.5x + 40.0 = 90$$

$$12.5x + 40 = 90$$

$$\underline{-40 \quad -40}$$

$$\frac{12.5x}{12.5} = \frac{50}{12.5}$$

$$x = \frac{50 \div 10}{12.5 \div 10}$$

12

$$= \frac{500}{125 \div 25} = \boxed{4}$$

Angles A and B are supplementary angles,

if  $\sphericalangle A = (3\frac{2}{5}x)^\circ$  and  $\sphericalangle B = (0.2x)^\circ$ ,

Method ①

find the value of  $x$ ???

$$\sphericalangle A + \sphericalangle B = 180$$

$$3\frac{2}{5}x + 0.2x = 180$$

$$3.4x + 0.2x = 180$$

$$3.6x = 180$$

$$3\frac{2 \times 2}{5 \times 2} = 3\frac{4}{10}$$

$$= 3.4$$

$$\begin{array}{r} 3.4 \\ + 0.2 \\ \hline 3.6 \end{array}$$

$$\frac{3.6x}{3.6} = \frac{180}{3.6} \Rightarrow x = \frac{180 \times 10}{3.6 \times 10} = \frac{1800 \div 18}{36 \div 18} = \boxed{50}$$

## Method ②

$$\sphericalangle A + \sphericalangle B = 180$$

$$3\frac{2}{5}x + 0.2x = 180$$

$$\frac{17}{5}x + \frac{2}{10}x = 180$$

$$\frac{17}{5}x + \frac{1}{5}x = 180$$

$$\frac{17x + 1x}{5} = 180$$

$$\frac{18x}{5} = 180$$

$$\frac{5}{18} \times \frac{18x}{5} = \frac{180}{1} \times \frac{5}{18}$$

$$x = \frac{180}{1} \times \frac{5}{18} = 50$$

$$x = 50$$

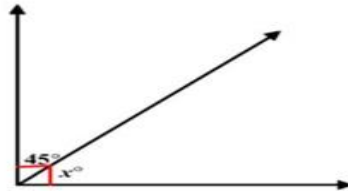
اننت  
القطعات فوهرة

تذكر  
جمع وطرح يسو  
يجب توصيف القطعات

تذكر  
القطر المطلوب

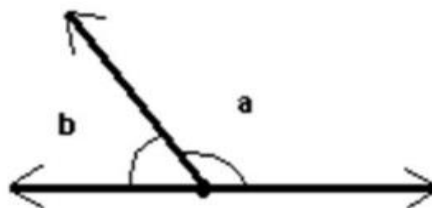
## Complements

- Complementary angles are two angles whose sum is  $90^\circ$  (or a right angle). Each of the two angles is called the complement of the other.



## Supplements

- Supplementary angles are two angles whose sum is  $180^\circ$  (or a straight angle). Each of the two angles is called the supplement of the other.





*Teacher: wisam Al – mashni*