

Name: _____

Grade: _____

Score: _____

Worksheet #4

**SUPPLEMENTARY ANGLES**

Learning goal: Students will be able to model and solve real-world and mathematical problems involving supplementary angles.

QUESTION	SOLUTION STEPS
Two supplementary angles differ by 20° . Find both angles.	
An angle is 30° less than its supplement. Find the angle.	
One angle is twice its supplement. Find the angle.	
The supplement of an angle is 30° more than half the angle. Find the angle.	
An angle's supplement is 10° less than four times the angle. Find the angle.	
Two supplementary angles are in ratio 3:2. Find both angles.	
An angle is 12° more than one-third of its supplement. Find the angle.	
Two supplementary angles differ by 40° . Find both angles.	
The supplement of an angle is 4 times the angle. Find the angle.	
Two supplementary angles are in ratio 5:4. Find both angles.	

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Worksheet #4(Answers)

**SUPPLEMENTARY ANGLES**

Learning goal: Students will be able to model and solve real-world and mathematical problems involving supplementary angles.

QUESTION	SOLUTION STEPS
Two supplementary angles differ by 20° . Find both angles.	Let smaller angle = x Larger angle = $x + 20^\circ$ $x + (x + 20^\circ) = 180^\circ$ $2x = 160^\circ$ $x = 80^\circ$ Larger angle = 100°
An angle is 30° less than its supplement. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $x = (180^\circ - x) - 30^\circ$ $2x = 150^\circ$ $x = 75^\circ$
One angle is twice its supplement. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $x = 2(180^\circ - x)$ $3x = 360^\circ$ $x = 120^\circ$
The supplement of an angle is 30° more than half the angle. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $180^\circ - x = 0.5x + 30^\circ$ $1.5x = 150^\circ$ $x = 100^\circ$
An angle's supplement is 10° less than four times the angle. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $180^\circ - x = 4x - 10^\circ$ $5x = 190^\circ$ $x = 38^\circ$

Two supplementary angles are in ratio 3:2. Find both angles.	Let angles = $3x$ & $2x$ $3x + 2x = 180^\circ$ $5x = 180^\circ$ $x = 36^\circ$ Angles = 108° & 72°
An angle is 12° more than one-third of its supplement. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $x = \frac{1}{3}(180^\circ - x) + 12^\circ$ $3x = 180^\circ - x + 36^\circ$ $4x = 216^\circ$ $x = 54^\circ$
Two supplementary angles differ by 40° . Find both angles.	Let smaller angle = x Larger angle = $x + 40^\circ$ $x + (x + 40^\circ) = 180^\circ$ $2x = 140^\circ$ $x = 70^\circ$ Larger angle = 110°
The supplement of an angle is 4 times the angle. Find the angle.	Let angle = x Supplement = $180^\circ - x$ $180^\circ - x = 4x$ $5x = 180^\circ$ $x = 36^\circ$
Two supplementary angles are in ratio 5:4. Find both angles.	Let angles = $5x$ & $4x$ $5x + 4x = 180^\circ$ $9x = 180^\circ$ $x = 20^\circ$ Angles = 100° & 80°