

Name: _____

Grade: _____

Score: _____

Worksheet #3



APPLICATIONS OF ADJACENT ANGLES

Learning goal: Students will be able to solve real-world problems using adjacent angle properties and apply adjacent angle concepts to practical situations

PROBLEM	ANSWER & EXPLANATION
A ladder leans against a wall, forming adjacent angles of 72° and x° at its base. Find x .	
A pizza slice has adjacent angles of 45° (crust side) and y° (tip side). If the total angle at the slice's point is 90° , find y .	
Two roads meet at a 50° angle. Find the adjacent angle formed by the other side of the intersection.	
A book's open pages form adjacent angles of 110° and z° . Find z .	
A clock shows 3:00. Find the adjacent angle between the hour and minute hands at 3:15.	
A roof's two sections meet at 120° . Find the adjacent angle inside the attic.	
A ramp makes a 25° angle with the ground. Find the adjacent angle on the other side of the ramp's base.	
A fan's blades are set at adjacent angles of 40° and 140° . Verify if they form a linear pair.	
A kite's cross-sticks create four adjacent angles. If one angle is 55° , find the angle next to it if they're complementary.	
A roof's two sections meet at 120° . Find the adjacent angle inside the attic.	
A mirror is tilted so its reflection creates adjacent angles of 30° and w° with the floor. Find w .	

Name:

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Worksheet #3(Answers)



APPLICATIONS OF ADJACENT ANGLES

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PROBLEM	ANSWER & EXPLANATION
A ladder leans against a wall, forming adjacent angles of 72° and x° at its base. Find x .	The ground and wall form a straight line (180°). So, $72^\circ + x = 180^\circ$ $x = 108^\circ$. Answer: 108°
A pizza slice has adjacent angles of 45° (crust side) and y° (tip side). If the total angle at the slice's point is 90° , find y .	Adjacent angles at the tip must sum to 90° : $45^\circ + y = 90^\circ$ $y = 45^\circ$. Answer: 45°
Two roads meet at a 50° angle. Find the adjacent angle formed by the other side of the intersection.	Roads form a straight line (180°). Adjacent angle = $180^\circ - 50^\circ = 130^\circ$. Answer: 130°
A book's open pages form adjacent angles of 110° and z° . Find z .	The book's spine creates a straight line: $110^\circ + z = 180^\circ$ $z = 70^\circ$. Answer: 70°
A clock shows 3:00. Find the adjacent angle between the hour and minute hands at 3:15.	At 3:15, the hour hand moves 7.5° (0.5° per minute $\times 15$). Minute hand at 90° . Adjacent angle = $90^\circ - 7.5^\circ = 82.5^\circ$ (but since they're adjacent, the smaller angle is 7.5°). Answer: 7.5°
A roof's two sections meet at 120° . Find the adjacent angle inside the attic.	Answer: 60° Explanation: The attic's ceiling forms a straight line: $120^\circ + x^\circ = 180^\circ$ $\rightarrow x^\circ = 60^\circ$.

A ramp makes a 25° angle with the ground. Find the adjacent angle on the other side of the ramp's base.	The ground forms a straight line: $25^\circ + x = 180^\circ$ $x = 155^\circ$. Answer: 155°
A fan's blades are set at adjacent angles of 40° and 140° . Verify if they form a linear pair.	Adjacent angles summing to 180° are a linear pair. Answer: Yes ($40^\circ + 140^\circ = 180^\circ$)
A kite's cross-sticks create four adjacent angles. If one angle is 55° , find the angle next to it if they're complementary.	Complementary angles sum to 90° : $55^\circ + x = 90^\circ$ $x = 35^\circ$.
A roof's two sections meet at 120° . Find the adjacent angle inside the attic.	Explanation: The attic's ceiling forms a straight line: $120^\circ + x = 180^\circ$ $x = 60^\circ$.
A mirror is tilted so its reflection creates adjacent angles of 30° and w° with the floor. Find w .	The mirror and floor form a straight line: $30^\circ + w^\circ = 180^\circ$ $w = 150^\circ$. Answer: 150°



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