NAME _____ DATE _____ PERIOD _____

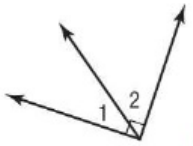
Lesson 2 Homework Practice

Complementary and Supplementary Angles

2 ANGLES TOTAL 90° ∠ 2 ANGLES TOTAL 180°

Classify each pair of angles as *complementary*, *supplementary*, or *neither*.

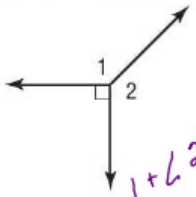
1.



∠1 + ∠2 = 90°

complementary

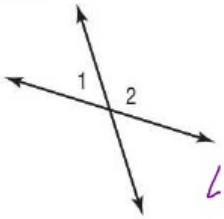
2.



∠1 + ∠2 > 90° BUT NOT 180°

neither

3.

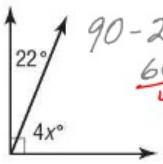


∠1 + ∠2 = 180°

supplementary

ALGEBRA Find the value of x in each figure.

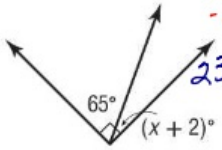
4.



90 − 22 = 4x
68 = 4x
17 = x

17

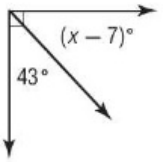
5.



90 − 65 = x + 2
25 = x + 2
−2 −2
23 = x

23

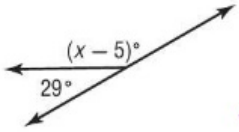
6.



90 − 43 = x − 7
47 = x − 7
+7 +7
54 = x

54

7.



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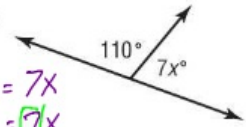
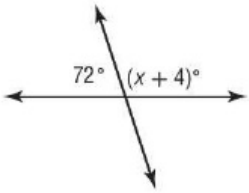
8.



180 − 110 = 7x
70 = 7x
7 7
10 = x

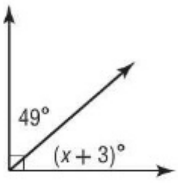
10

9.



104

10.



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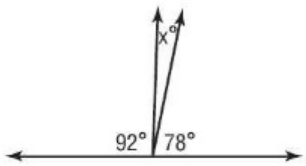
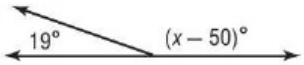
11.



10

12.



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13. ALGEBRA If $\angle C$ and $\angle D$ are supplementary, and the measure of $\angle D$ is 45°, what is the measure of $\angle C$? **135°**

∠C + ∠D = 180°
∠C + 45° = 180°
−45° −45°
∠C = 135°

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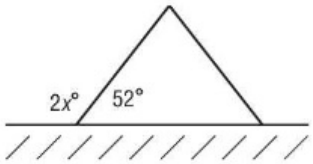
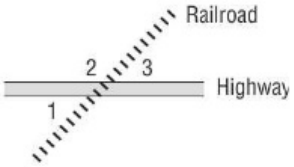
Lesson 2 Problem-Solving Practice

Complementary and Supplementary Angles

1. PYRAMIDS A side view of the Great Pyramid at Giza is shown below. The sides of the pyramid make an angle of 52° with respect to the ground. What is the value of x? **64**

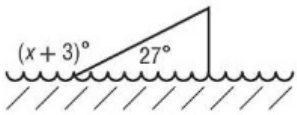


2. RAILROAD A map shows a railroad crossing a highway, as shown below. Which of the numbered angles are supplementary angles?
∠1 and ∠2; ∠2 and ∠3

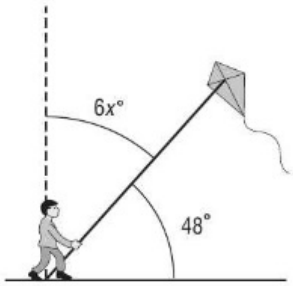


3. RAILROAD Refer to the map shown in Exercise 2. If $m\angle 1$ is 64°, what is the measure of ∠2? **116**

4. SKIING A ski jump makes an angle of 27° with respect to the water as shown below. How are the 27° angle and the unknown angle related? What is the value of x? **supplementary angles; 150**



5. KITES A kite string makes an angle of 48° with respect to the ground as shown below. The dashed line is vertical and the ground is horizontal. How are the 48° angle and the unknown angle related? What is the value of x?
complementary angles; 7



6. GAMES In a game of pick-up-sticks, the last 4 sticks are shown below. Which of the numbered angles are supplementary angles? **∠1 and ∠2, ∠3 and ∠4, ∠5 and ∠6**