Geometry

2.7 Prove Angle Pair Relationships

# Theorems

## All right angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

congruent

## Congruent Supplements Theorem

congruent

supplementary

If two angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the same angle (or to congruent angles), then they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Congruent Complements Theorem

congruent

complementary

If two angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the same angle (or to congruent angles), then they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Linear Pair Postulate

Linear pair

supplementary

If two angles form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Vertical Angles Congruence Theorem

congruent

Vertical angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3x – 2

y

2x + 4

Find x and y

3x- 2 = 2x + 4 🡪 x = 6

y = 180 – (3x – 2) = 180 – (3(6) + 4) = 180 – (18 + 4) = 18 – 22 = 158

m

n

ℓ

1

2

Given: ℓ ⊥ m, ℓ ⊥ n

Prove: ∠1 ≅ ∠2

|  |  |
| --- | --- |
| Statements | Reasons |
| ℓ ⊥ m, ℓ ⊥ n | Given |
| ∠1 and ∠2 are right angles | Def Perpendicular Lines |
| ∠1 ≅ ∠2 | All right are |

Given: ∠1 and ∠3 are complements

2

3

4

1

5

6

7

8

∠3 and ∠5 are complements

Prove: ∠1 ≅ ∠5

|  |  |
| --- | --- |
| Statements | Reasons |
| ∠1 and ∠3 are complements  ∠3 and ∠5 are complements | Given |
| ∠1 ≅ ∠5 | congruent complements theorem |
|  |  |

Assignment: 127 #2-28 even, 32-46 even, 50, 52 = 24 total

Extra Credit: 131 #2, 4 = +2