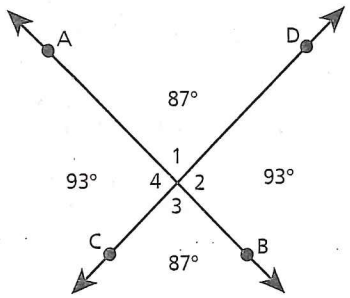
TUES

Name Key Date

Vertical Angles

Vertical angles can be thought of as opposite angles. Their sides form two pairs of opposite rays. Vertical angles are the nonadjacent angles formed when two lines intersect.



Line AB and line CD intersect.

Angle 1 and angle 3 are vertical angles.
Angle 2 and angle 4 are vertical angles.

Vertical angles are congruent. The angle measure for each vertical angle pair will be the same.

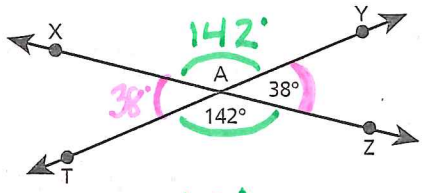
Adjacent angles are supplementary.

$\angle 1 + \angle 2 = 180°$

$\angle 3 + \angle 4 = 180°$

Use vertical angles to determine the missing measures. Name the vertical angle pairs.

1



m∠XAY = 142°

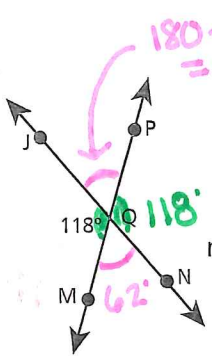
m∠XAT = 38°

Vertical Pairs: Vertical angles are ≅

∠XAT and ∠ZAY

∠XAT and ∠ZAT

2



m∠PQN = 118°

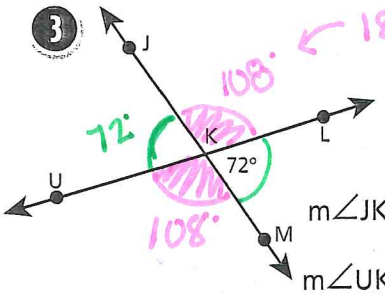
m∠JQP = 62°

Vertical pairs: vertical ∠s are ≅

∠JQP and ∠NQM

∠JQM and ∠NQP

3



m∠JKL = 108°

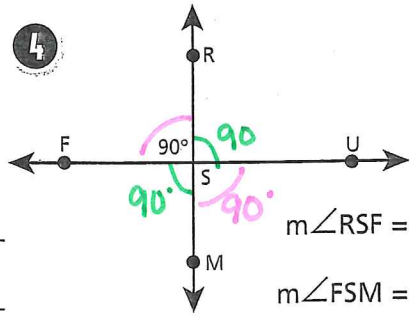
m∠UKJ = 72°

Vertical pairs: vertical ∠s are ≅

∠JKL and ∠MKU

∠UKJ and ∠LKM

4



m∠RSF = 90°

m∠FSM = 90°

Vertical pairs: vertical ∠s are ≅

∠RSF and ∠USM

∠FSM and ∠RSU

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Find Missing Angle Measurements

Use your understanding of complementary, supplementary, and linear angles to find the missing measures.

∠10 and ∠11 are complementary angles. $\angle 10 + \angle 11 = 90°$

1. If m∠10 = 32°, then m∠11 = 58° $32 + \angle 11 = 90$, $-32 \quad -32$
2. If m∠10 = 63°, then m∠11 = 27° $63 + \angle 11 = 90$
3. If m∠10 = 11°, then m∠11 = 79° $11 + \angle 11 = 90$

∠14 and ∠15 are supplementary angles. $\angle 14 + \angle 15 = 180$

4. If m∠14 = 68°, then m∠15 = 112° $68 + \angle 15 = 180°$
5. If m∠14 = 111°, then m∠15 = 69° $111 + \angle 15 = 180°$
6. If m∠14 = 87°, then m∠15 = 93° $87 + \angle 15 = 180$

$\angle M + \angle P = 180°$

Linear Pairs are supplementary!!

∠M and ∠P are linear angles.

7. If m∠M = 67°, then m∠P = 113° $67 + \angle P = 180°$
8. If m∠M = 132°, then m∠P = 48° $132 + \angle P = 180°$
9. If m∠M = 44°, then m∠P = 136° $44 + \angle P = 180°$

∠5 and ∠6 are complementary angles. ∠6 and ∠7 are supplementary angles. All are nonadjacent. $\angle 5 + \angle 6 = 90°$ $\angle 6 + \angle 7 = 180°$

10. If m∠5 = 34°, then m∠6 = 56°, and m∠7 = 93°
11. If m∠6 = 50°, then m∠5 = 40°, and m∠7 = 140°
12. If m∠7 = 132°, then m∠6 = 48°, and m∠5 = 42°