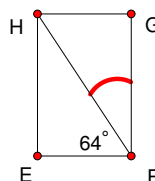
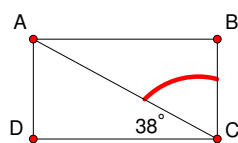


In a rectangle, every angle is a right angle, which is 90° . Also, all the angles in a triangle add up to 180° .

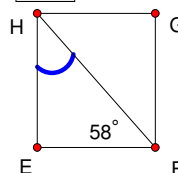
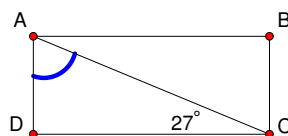
Also, note, when a question says *Find $\angle ACB$* , it doesn't mean circle the angle in the picture, it means find the angle measure.

1. $\angle ACB$ in the following rectangle $ABCD$ on the left is highlighted in red. We know that the corner of the rectangle, $\angle DCB$ is a 90° angle, so $\angle ACB + 38^\circ = 90^\circ$. So this means $\angle ACB = 90^\circ - 38^\circ = \boxed{52^\circ}$



2. $\angle HFG$ in rectangle $EFGH$ is highlighted in red. We know that the corner of the rectangle is a right angle, so $\angle EFG = 90^\circ$. So $\angle HFG + 64^\circ = 90^\circ$, which means $\angle HFG = 90^\circ - 64^\circ = \boxed{26^\circ}$.

3. $\angle DAC$ in rectangle $ABCD$ is marked in blue below left. We know that the angles in a triangle add up to 180° . So we can see that $\angle DAC + \angle ACD + \angle ADC = 180^\circ$. Since $ABCD$ is a rectangle, $\angle ADC = 90^\circ$. We are given $\angle ACD = 27^\circ$. So $\angle DAC + 27^\circ + 90^\circ = \angle DAC + 117^\circ = 180^\circ$. So $\angle DAC = 180^\circ - 117^\circ = \boxed{63^\circ}$.



4. Like in problem 3, we know that $\angle EHF + \angle HEF + \angle EFH = \angle EHF + 90^\circ + 58^\circ = \angle EHF + 148^\circ = 180^\circ$. So $\angle EHF = 180^\circ - 148^\circ = \boxed{32^\circ}$.

5. **Brandon and His Classmates**

Brandon is facing	If he turns through	he will face
Hunter	3 right angles to his right	<i>Ryder</i>
Mason	1 right angle to his left	<i>Albert</i>
Albert	1 right angle to his right	<i>Mason</i>
Ryder	2 right angles	<i>Albert</i>
Hunter	3 right angles to his left	<i>Albert</i>
Mason	4 right angles	<i>Mason</i>

6. $a = 35^\circ, b = 19^\circ, c = 43^\circ$

7. $\boxed{\text{square}}$

8. $\boxed{\text{octagon}}$

9. $\boxed{90^\circ}$



Math Olympiad and Problem Solving Programs
F120 - Intermediate Problem Solving
Problem Set 21.2 - Angles

Name:

Date:

10. 150°