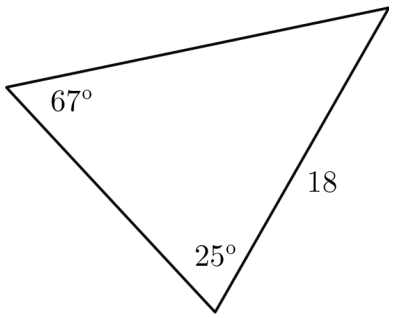
Mr. Claydon
Pre - Calculus

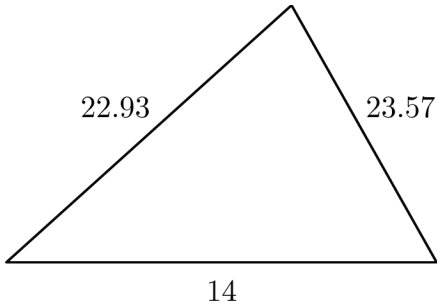
Name: _____ Date: _____
Period: _____

Test 6.1 - 6.3: Vectron, Defender of the Universe

1. Find the missing sides and angles in this triangle:



2. Find all the angles of the given triangle:



Find the a) component form, b) vector form, and c) magnitude/direction of the vectors defined by the given points.

3. $A : (3, 0)$ $B : (-2, 3)$

4. $G : (-1, 4)$ $R : (10, 4)$

5. $T : (-1, 7)$ $W : (-1, 8)$

6. $P : (7, 11)$ $N : (20, 12)$

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Test 6.1 - 6.3

Perform the following vector operations given $\mathbf{a} = 8\hat{i} - 12\hat{j}$ and $\mathbf{b} = -3\hat{i} + 4\hat{j}$.

7. $\mathbf{a} + \mathbf{b}$

8. $-3\mathbf{a} - \mathbf{b}$

9. $\mathbf{a} + 2\mathbf{b}$

10. $2\mathbf{b} + \frac{1}{2}\mathbf{a}$

Find the component forms of the given vectors.

11. $\|\mathbf{v}\| = 7.5 \quad \theta = 35^\circ$

12. $\|\mathbf{f}\| = 1.356 \quad \theta = 100^\circ$

13. $\|\mathbf{r}\| = 4.6 \quad \theta = -56.7^\circ$

14. $\|\mathbf{p}\| = 12 \quad \theta = 90^\circ$

Hinty Hints:

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$a^2 = b^2 + c^2 - 2bc\cos A$$

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

Bonus: Why don't we have school on February 21?