

**Proving the Formula  $A = 1/2 ab \sin(C)$  - Independent Practice Worksheet**

Complete all the problems.

1. In triangle  $opq$ : side  $p = 3$  and side  $q = 8$ ,  $O = 45^\circ$ . Find the area of triangle by using the sin rule formula.
2. In triangle  $RST$ , area of triangle =  $360 \text{ m}^2$ ,  $t = 24\text{m}$ ,  $r = 30\text{m}$ . Find the value of  $\sin S$ .
3. In triangle  $DEF$ : Area of triangle =  $28$ , side  $f = 8$ ,  $E = 25^\circ$ . Find the side  $d$  by sin rule formula.
4. Acute triangle  $XYZ$ , with  $x, y, z$ , being the respective opposite sides to angle  $X$ , angle  $Y$ , angle  $Z$ , and altitude,  $h$ , drawn from angle  $Y$  to  $y$ . Can you prove that: the area of triangle  $XYZ = 1/2 xy \sin Z$ .
5. Given side  $l = 6$ , side  $m = 4$ , and  $N = 25^\circ$ . Find the area of triangle by sin rule formula.
6. Can you prove that: The area of triangle  $IJK = 1/2 ij \sin K$ .
7. Can you prove that: The area of triangle  $PQR = 1/2 pq \sin P$ .
8. Acute triangle  $STV$ , with  $s, t, v$ , being the respective opposite sides to angle  $S$ , angle  $T$ , angle  $V$ , and altitude,  $h$ , drawn from angle  $T$  to  $t$ .  
Can you prove that: The area of triangle  $STV = 1/2 st \sin T$ .
9. In triangle  $UVW$  Area of triangle =  $18$ ,  $u = 9$ ,  $v = 5$ . Find the value of  $\sin W$ .
10. Can you prove that: The area of triangle  $BCD = 1/2 bc \sin d$ .



Name \_\_\_\_\_

Date \_\_\_\_\_

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Worksheet Answer Key**

1. 8.5

2. 1

3. 16.56

4. Yes

5. 5.07

6. Yes

7. No

8. No

9. 0.8

10. Yes

