



Simplify the expression.

1.  $2\sqrt{5} + \sqrt{5}$   
 $\boxed{3\sqrt{5}}$

2.  $12\sqrt{6} + 5\sqrt{6} - 2\sqrt{6}$   
 $17\sqrt{6} - 2\sqrt{6}$   
 $\boxed{15\sqrt{6}}$

3.  $\sqrt{144} - \sqrt{25}$   
 $12 - 5$   
 $\boxed{7}$

4.  $\sqrt{32} + 2\sqrt{2}$   
 $4\sqrt{2} + 2\sqrt{2} = \boxed{6\sqrt{2}}$

5.  $\sqrt{18} - \sqrt{2}$   
 $3\sqrt{2} - \sqrt{2}$   
 $\boxed{2\sqrt{2}}$

6.  $\sqrt{28} - \sqrt{63}$   
 $2\sqrt{7} - 3\sqrt{7} = \boxed{-1\sqrt{7} \text{ OR } -\sqrt{7}}$

7.  $\sqrt{24} + \sqrt{54} + 8\sqrt{6}$   
 $2\sqrt{6} + 3\sqrt{6} + 8\sqrt{6}$   
 $\boxed{13\sqrt{6}}$

8.  $\sqrt{44} + \sqrt{4}$   
 $2\sqrt{11} + 2$

9.  $10\sqrt{6} - 13\sqrt{6}$   
 $\boxed{-3\sqrt{6}}$

10.  $\sqrt{12} - \sqrt{48} + \sqrt{3}$   
 $2\sqrt{3} - 4\sqrt{3} + \sqrt{3} = \boxed{-1\sqrt{3} \text{ OR } -\sqrt{3}}$

$$11. \quad \sqrt{20} + \sqrt{5}$$

$$2\sqrt{5} + \sqrt{5} = \boxed{3\sqrt{5}}$$

$$12. \quad \sqrt{28} - 3\sqrt{7} + \sqrt{63}$$

$$2\sqrt{7} - 3\sqrt{7} + 3\sqrt{7} = \boxed{2\sqrt{7}}$$

$$13. \quad 10\sqrt{3} + 5\sqrt{3}$$

$$\boxed{15\sqrt{3}}$$

$$14. \quad 7\sqrt{45} + 2\sqrt{20}$$

$$7 \cdot 3\sqrt{5} + 2 \cdot 2\sqrt{5}$$

$$21\sqrt{5} + 4\sqrt{5} = \boxed{25\sqrt{5}}$$

$$15. \quad \sqrt{64} + \sqrt{36} + \sqrt{18}$$

$$8 + 6 + 3\sqrt{2}$$

$$\boxed{14 + 3\sqrt{2}}$$

$$16. \quad \sqrt{8} - \sqrt{32}$$

$$2\sqrt{2} - 4\sqrt{2} = \boxed{-2\sqrt{2}}$$

$$17. \quad \sqrt{500} - \sqrt{245} + \sqrt{320}$$

$$10\sqrt{5} - 7\sqrt{5} + 8\sqrt{5} = \boxed{11\sqrt{5}}$$

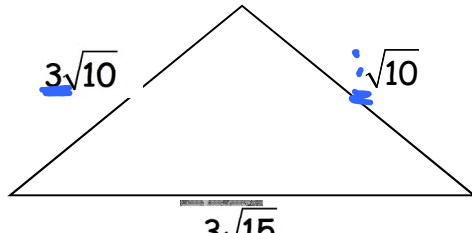
$$18. \quad 2\sqrt{20} - 3\sqrt{24} - \sqrt{180}$$

$$2 \cdot 2\sqrt{5} - 3 \cdot 2\sqrt{6} - 6\sqrt{5}$$

$$4\sqrt{5} - 6\sqrt{6} - 6\sqrt{5} = \boxed{-2\sqrt{5} - 6\sqrt{6}}$$

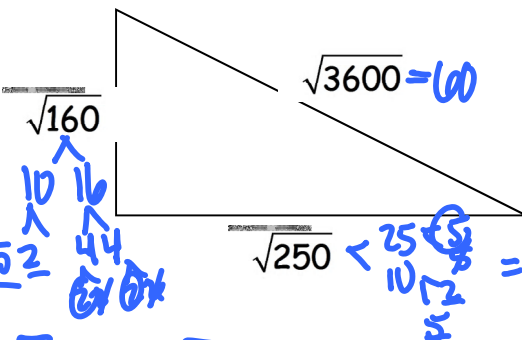
Find the perimeter of the following triangles.

19.



$$\boxed{4\sqrt{10} + 3\sqrt{15}}$$

20.



$$4\sqrt{10} + 5\sqrt{10} + 60$$

$$\boxed{9\sqrt{10} + 60}$$