Name: _____ Date: _____

Similarity in Right Triangles - Medium

In right triangle ABC with the right angle at C, altitude CD meets hypotenuse AB at D. Find the length of the altitude CD ($CD^2 = AD \cdot DB$).

1. AD = 1, DB = 9
2. AD = 9, DB = 4
3. AD = 2, DB = 8
4. AD = 4, DB = 10
5. AD = 4, DB = 16
6. AD = 10, DB = 12

---

riangle ABC with the right angle at C, altitude CD meets hypotenuse AB at D. Find the length of the leg ($AC^2 = AD \cdot AB$, $BC^2 = DB \cdot AB$). Use simplest radi

7. AD = 4, DB = 7. Find BC.
8. AD = 10, DB = 6. Find BC.
9. AD = 3, DB = 6. Find AC.
10. AD = 1, DB = 2. Find BC.

Name: _____ Date: _____

Similarity in Right Triangles - Medium

In right triangle ABC with the right angle at C, altitude CD meets hypotenuse AB at D. Find the length of the leg ($AC^2 = AD \cdot AB$, $BC^2 = DB \cdot AB$). Use simplest radical form.

11. AD = 2, DB = 8. Find BC.

12. AD = 4, DB = 13. Find AC.

---

ht triangle ABC with the right angle at C, altitude CD meets hypotenuse AB at D. Find AC^2 and BC^2 using the similar triangles. Then show that $AC^2 + BC^2 =$

13. AD = 11, DB = 1

14. AD = 13, DB = 8

15. AD = 16, DB = 2

16. AD = 5, DB = 13

17. AD = 10, DB = 13

18. AD = 11, DB = 5

19. AD = 12, DB = 9

20. AD = 10, DB = 15

Similarity in Right Triangles – Medium – Answer Key

1. AD = 1, DB = 9
   CD = $\sqrt{(1 \cdot 9)} = 3$

2. AD = 9, DB = 4
   CD = $\sqrt{(9 \cdot 4)} = 6$

3. AD = 2, DB = 8
   CD = $\sqrt{(2 \cdot 8)} = 4$

4. AD = 4, DB = 10
   CD = $\sqrt{(4 \cdot 10)} = 2\sqrt{10}$

5. AD = 4, DB = 16
   CD = $\sqrt{(4 \cdot 16)} = 8$

6. AD = 10, DB = 12
   CD = $\sqrt{(10 \cdot 12)} = 2\sqrt{30}$

7. AD = 4, DB = 7. Find BC.
   BC = $\sqrt{(7 \cdot 11)} = \sqrt{77}$

8. AD = 10, DB = 6. Find BC.
   BC = $\sqrt{(6 \cdot 16)} = 4\sqrt{6}$

9. AD = 3, DB = 6. Find AC.
   AC = $\sqrt{(3 \cdot 9)} = 3\sqrt{3}$

10. AD = 1, DB = 2. Find BC.
    BC = $\sqrt{(2 \cdot 3)} = \sqrt{6}$

Similarity in Right Triangles - Medium - Answer Key

11. AD = 2, DB = 8. Find BC.

$BC = \sqrt{(8 \cdot 10)} = 4\sqrt{5}$

12. AD = 4, DB = 13. Find AC.

$AC = \sqrt{(4 \cdot 17)} = 2\sqrt{17}$

13. AD = 11, DB = 1

$AC^2 = 11 \cdot 12 = 132$; $BC^2 = 1 \cdot 12 = 12$; $132 + 12 = 144 = 12^2 = AB^2$

14. AD = 13, DB = 8

$AC^2 = 13 \cdot 21 = 273$; $BC^2 = 8 \cdot 21 = 168$; $273 + 168 = 441 = 21^2 = AB^2$

15. AD = 16, DB = 2

$AC^2 = 16 \cdot 18 = 288$; $BC^2 = 2 \cdot 18 = 36$; $288 + 36 = 324 = 18^2 = AB^2$

16. AD = 5, DB = 13

$AC^2 = 5 \cdot 18 = 90$; $BC^2 = 13 \cdot 18 = 234$; $90 + 234 = 324 = 18^2 = AB^2$

17. AD = 10, DB = 13

$AC^2 = 10 \cdot 23 = 230$; $BC^2 = 13 \cdot 23 = 299$; $230 + 299 = 529 = 23^2 = AB^2$

18. AD = 11, DB = 5

$AC^2 = 11 \cdot 16 = 176$; $BC^2 = 5 \cdot 16 = 80$; $176 + 80 = 256 = 16^2 = AB^2$

19. AD = 12, DB = 9

$AC^2 = 12 \cdot 21 = 252$; $BC^2 = 9 \cdot 21 = 189$; $252 + 189 = 441 = 21^2 = AB^2$

20. AD = 10, DB = 15

$AC^2 = 10 \cdot 25 = 250$; $BC^2 = 15 \cdot 25 = 375$; $250 + 375 = 625 = 25^2 = AB^2$