11.1D

Example 1

$\sqrt{16} + \sqrt{9} = 4 + 3 = 7$

$\sqrt{16+9} = \sqrt{25} = 5$ } TWO different problems.

Ex. 2 Can only add radicals with identical radicands i.e.

$5\sqrt{2} + 3\sqrt{2} = 8\sqrt{2}$

Example 3

$2\sqrt{196} = 2\sqrt{14^2} = 2(14) = 28$

Find the square root and then multiply (See Example 5 p. 453) by the number outside the radical.

Example 4

$\sqrt{16} \cdot \sqrt{9} = \sqrt{144} = 12$ } Radicals can be multiplied and then find the square root of the product.

or

$4 \cdot 3 = 12$ } or find the root and then multiply

Example 5

$$\frac{\sqrt{9 \times 16}}{\sqrt{81-45}} = \frac{\sqrt{144}}{\sqrt{36}} = \frac{12}{6} = 2$$

and

$$\frac{-\sqrt{144}}{2(\sqrt{25}-\sqrt{9})} = \frac{-12}{2(5-3)} = \frac{-12}{2(2)} = \frac{-12}{4} = -3$$

Jest for Fun

1. What happened when the teacher told ten jokes trying to make the class laugh?

18	17	8	9	1	18	13	5	18	8	14	2	18	13	12	5	12	

2. What is the best book on how to make up your own jokes?

12	17	3	16	5	14	10	7	17	1	15	6	2	11	4	

Solve the equation. (Be sure to check each solution in the original equation.) Then find your solution in the answer column. Each time the exercise number appears in the code, write the letter of the answer in the space above it. If the answer has a ●, leave the space blank.

1. $\sqrt{x} = 7$
2. $\sqrt{3y} = 6$
3. $\sqrt{9a} = 12$
4. $\sqrt{\frac{m}{4}} = 3$
5. $\sqrt{\frac{u}{7}} = 10$
6. $\sqrt{d} + 5 = 20$
7. $\sqrt{4b} - 9 = 11$
8. $\sqrt{6p} + 13 = 18$
9. $\sqrt{3k + 10} = 7$
10. $\sqrt{8a + 1} + 5 = 16$
11. $\sqrt{5x + 2} - 4 = 0$
12. $\sqrt{7b - 10} + 3 = 1$
13. $\sqrt{\frac{w}{6}} + 4 = 9$
14. $\sqrt{y} = 8\sqrt{2}$
15. $\sqrt{18n - 3} = \sqrt{24}$
16. $\sqrt{9h - 16} = \sqrt{4h + 4}$
17. $\sqrt{2t - 5} = \sqrt{11t - 35}$
18. $6\sqrt{v} = \sqrt{6v + 15}$

Answers 1-6

- I 700
- ● 16
- U 49
- V 64
- ● 400
- S 225
- F 36
- E 12
- H *no solution*

Answers 7-12

- P 13
- G 14
- ● 15
- L $\frac{14}{5}$
- Y 100
- C 5
- T $\frac{9}{5}$
- ● $\frac{25}{6}$
- D *no solution*

Answers 13-18

- G $\frac{4}{3}$
- R $\frac{3}{2}$
- T 128
- A 180
- O $\frac{10}{3}$
- N $\frac{1}{2}$
- ● 150
- W 4
- M *no solution*

Example 1

$x^2 = 100$ take the square root of both sides

$x = \pm 10$

Both +10 and -10 are solutions because

$(-10)^2$ and $(10)^2 = 100$

Look at Example 4 p. 462

$3x^2 - 12 = 18$

$+12 \quad +12$

$3x^2 = 30$

$x^2 = 10$ ← take square root of both sides

$x = \pm\sqrt{10}$

* If the solution is the square root of a negative number, there is no real solution.

See Example 5 p. 463

also $6x^2 + 41 = 17$

$6x^2 = -24$

$x^2 = -4$

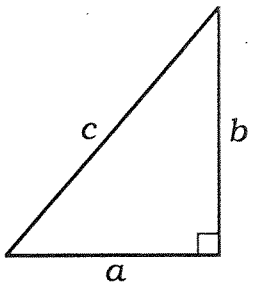
$x = \sqrt{-4}$

Not a solution

What Did Dr. Dripp Say to the Bleeding Kid Who Refused to Get Stitches?

Find the missing side length, if possible (some answers are rounded). Cross out the letter next to the correct answer. When you finish, the answer to the title question will remain.

For Exercises 1-8, refer to the diagram at the right.



1. $a = 6$, $b = 8$
   $c =$ _____

2. $a = 10$, $b = 7$
   $c =$ _____

3. $a = 15$, $b = 15$
   $c =$ _____

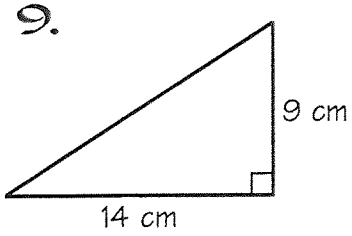
4. $a = 10$, $c = 26$
   $b =$ _____

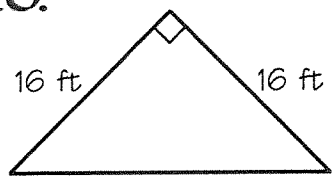
5. $b = 30$, $c = 50$
   $a =$ _____

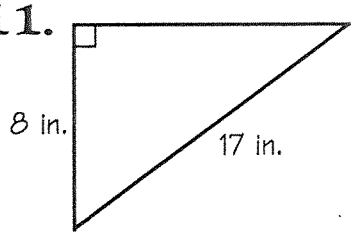
6. $a = 5$, $c = 12$
   $b =$ _____

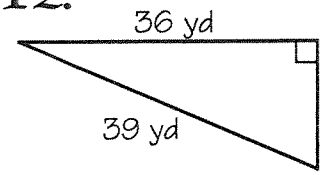
7. $b = 13$, $c = 20$
   $a =$ _____

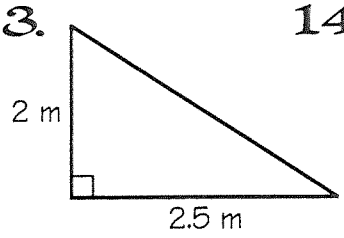
8. $a = 1.5$, $b = 2$
   $c =$ _____

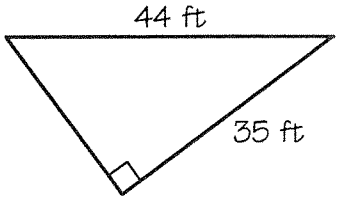
9. 

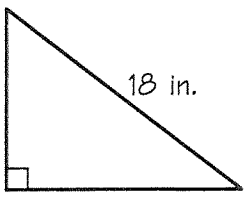
10. 

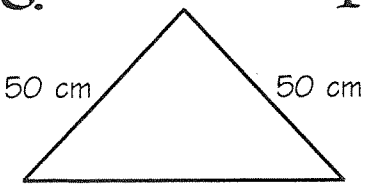
11. 

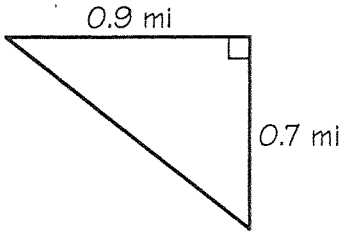
12. 

13. 

14. 

15. 

16. 

17. 

Answers 1-8	
T	40
H	12.2
S	2.8
T	10.9
O	2.5
E	42
L	22.9
L	24
P	15.2
F	11.5
I	10
T	21.2

Answers 9-17	
A	3.2 m
S	17.4 cm
O	22.6 ft
C	16 yd
U	14.2 in.
P	24.5 ft
T	15 in.
R	*not possible*
B	1.3 mi
U	26.7 ft
E	3.6 m
R	1.1 mi
L	16.6 cm
L	14.6 in.
E	15 yd
D	