

Special Right Triangles

Isosceles Right Triangle

$a = 4$
 $b = 4\sqrt{2}$

30-60-90 Triangle

$a = 3\sqrt{3}$
 $b = 2 \cdot 3 = 6$

Find the missing sides.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

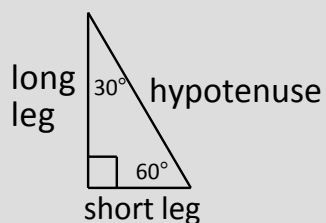
12.

Cross out the correct answers. The remaining letters (one per space) complete the statement.

5 EQ	9 HA	$6\sqrt{2}$ UA	3 LT	10 LF	$3\sqrt{2}$ OT	3 HE	$4\sqrt{3}$ SQ	$3\sqrt{2}$ UA	12 RE	$2\sqrt{2}$ RO
$6\sqrt{3}$ OT	$5\sqrt{3}$ OF	25 TH	$3\sqrt{3}$ ER	$6\sqrt{3}$ AD	5 IU	20 EH	3 SO	$3\sqrt{3}$ FT	36 YP	2 PY
11 OT	4 TH	16 EN	6 AG	8 OR	32 US	$5\sqrt{2}$ AS	2 TH	7 E.	$8\sqrt{3}$ T.	$2\sqrt{2}$ S.

In a 30-60-90 degrees right triangle, the side opposite the 30-degree angle is

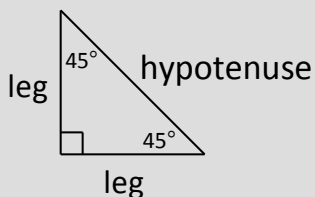
Special Right Triangles



$$\text{short leg} = \frac{1}{2} \cdot \text{hypotenuse}$$

$$\text{long leg} = \sqrt{3} \cdot (\text{short leg})$$

$$\text{hypotenuse} = 2 \cdot (\text{short leg})$$

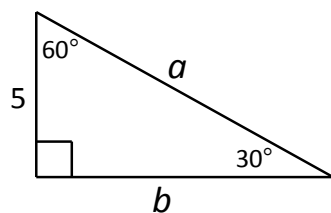


legs are equal

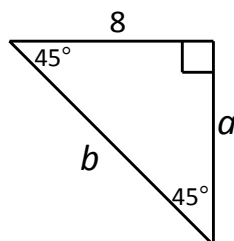
$$\text{hypotenuse} = \sqrt{2} \cdot (\text{leg})$$

Use the 30-60-90 and 45-45-90 triangle relationships to solve for the missing sides. Use the answers to reveal the name of the team that Abraham M. Saperstein established and sent on the road in 1927.

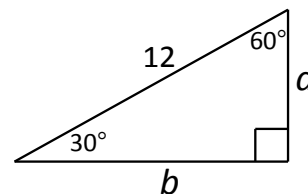
1



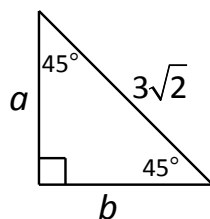
2



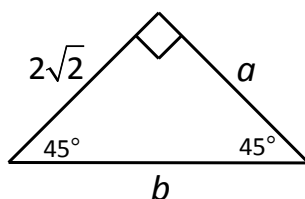
3



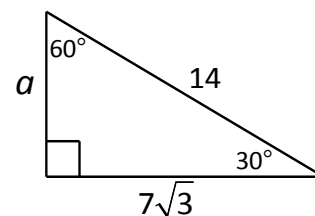
4



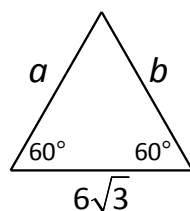
5



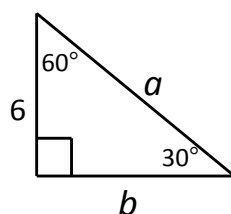
6



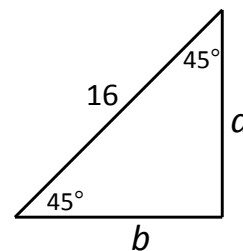
7



8



9



8	$2\sqrt{2}$	3	6	$5\sqrt{3}$	4	7	12	$8\sqrt{2}$	10	$6\sqrt{3}$
A	B	E	G	H	L	M	O	R	S	T

8b 1b 4a 1b 2a 9b 5b 4b 6a

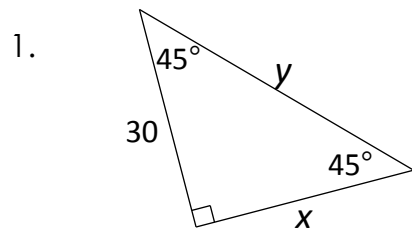
3a 5b 8a 5a 4a 7a 2b 8a 7b 3b 4b 9a 1a

Chapter 8

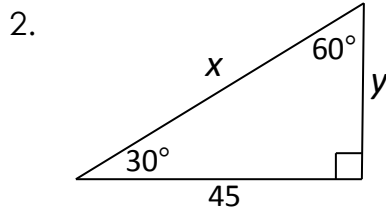
Practice Worksheet 1

(Use with section 8-3)

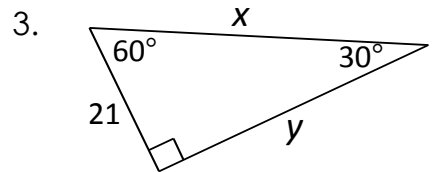
Find the values of x and y in each of the following triangles.



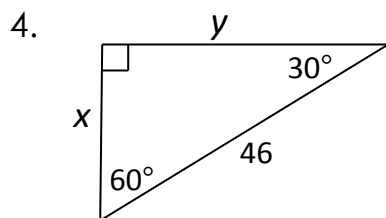
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



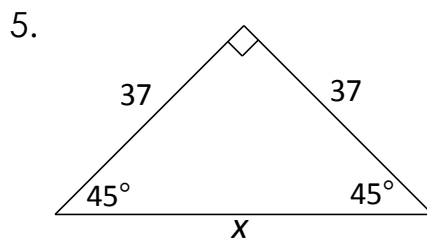
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



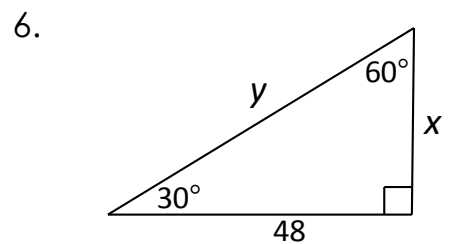
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



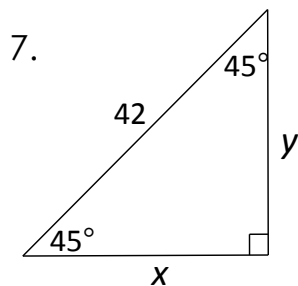
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



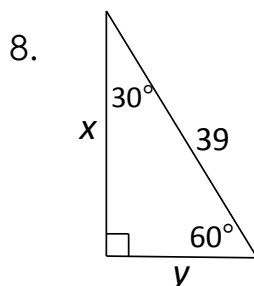
$x = \underline{\hspace{2cm}}$



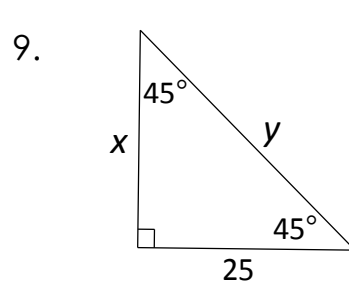
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



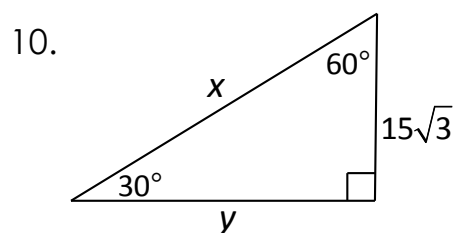
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



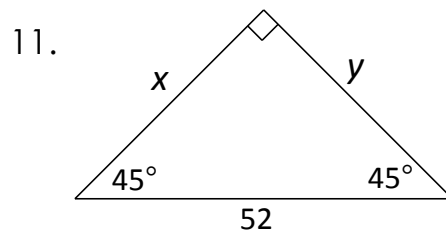
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



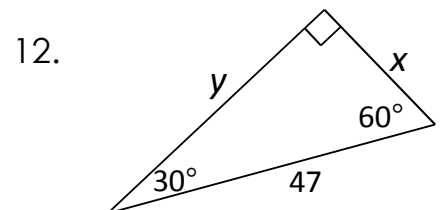
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

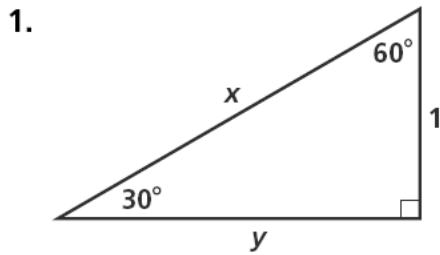


$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

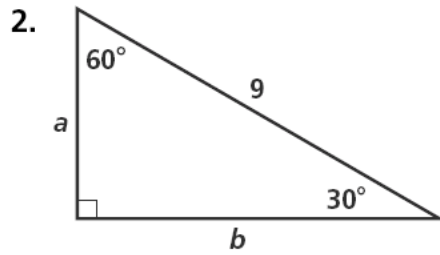
Practice 8-3

Special Right Triangles

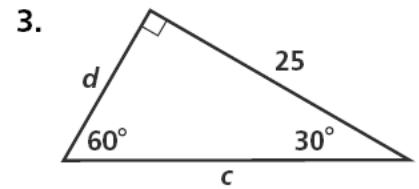
Find the value of each variable. Leave your answers in simplest radical form.



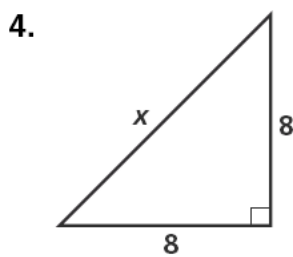
$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



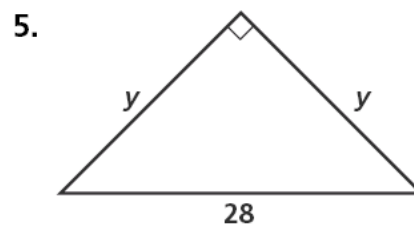
$a = \underline{\hspace{2cm}}$ $b = \underline{\hspace{2cm}}$



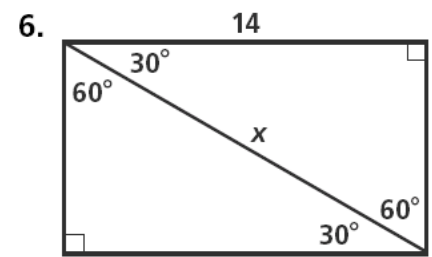
$c = \underline{\hspace{2cm}}$ $d = \underline{\hspace{2cm}}$



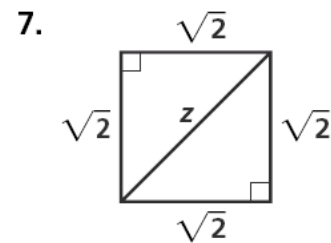
$x = \underline{\hspace{2cm}}$



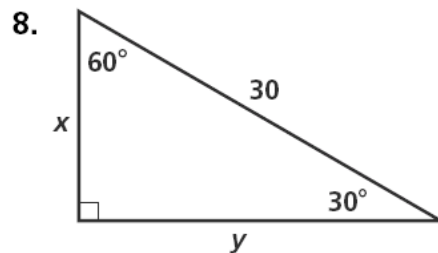
$y = \underline{\hspace{2cm}}$



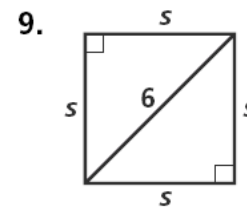
$x = \underline{\hspace{2cm}}$



$z = \underline{\hspace{2cm}}$



$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$



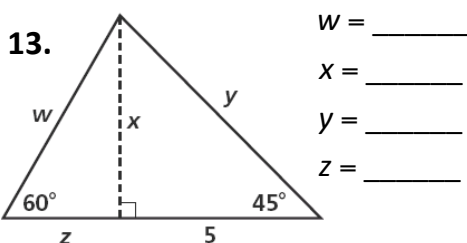
$s = \underline{\hspace{2cm}}$

10. Find the length to the nearest centimeter of the diagonal of a square with 30 cm on a side.

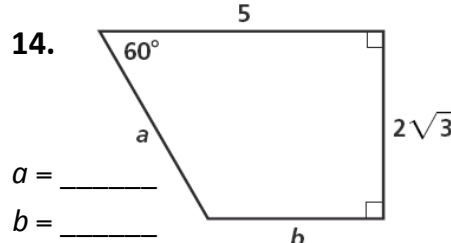
11. The hypotenuse of an isosceles right triangle is 8.4 in. find the length of a side to the nearest tenth.

12. In a 30° - 60° - 90° triangle, the shorter leg is 6 ft long. Find the length of the other two sides to the nearest tenth.

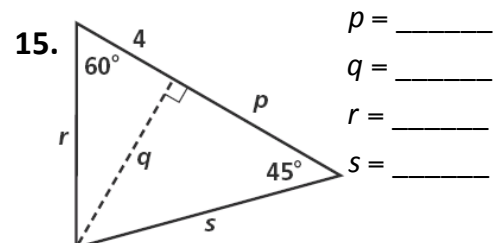
Algebra Find the value of each variable. Leave your answers in simplest radical form.



$w = \underline{\hspace{2cm}}$
 $x = \underline{\hspace{2cm}}$
 $y = \underline{\hspace{2cm}}$
 $z = \underline{\hspace{2cm}}$



$a = \underline{\hspace{2cm}}$
 $b = \underline{\hspace{2cm}}$



$p = \underline{\hspace{2cm}}$
 $q = \underline{\hspace{2cm}}$
 $r = \underline{\hspace{2cm}}$
 $s = \underline{\hspace{2cm}}$