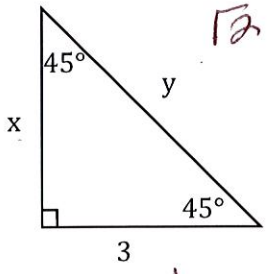
45-45-90
1 : 1 : √2

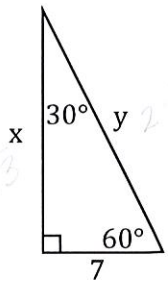
Label each special right triangle, and find the missing sides.

1.



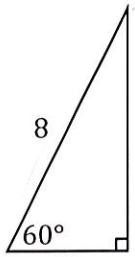

√2
x = 3
y = 3√2

2.



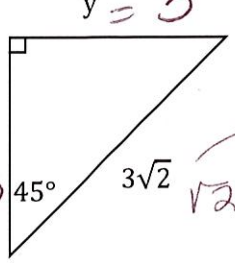

30:60:90
1 : √3 : 2
7 : x : y
x = 7√3  y = 14

3.



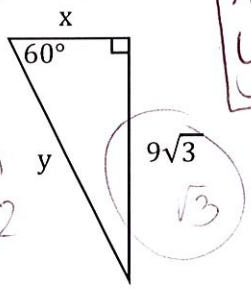

30-60-90
1 : √3 : 2
4 : 4√3 : 8
x = 4√3
y = 4

4.



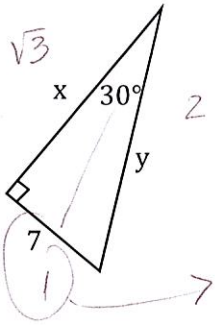

1 : 1 : √2
3 : 3 : 3√2
x = 3
y = 3
times by 3 so... all times by 3

5.



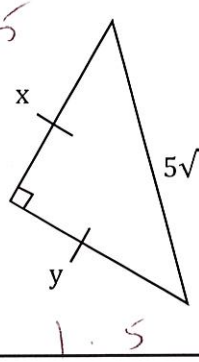

1 : 9 : √3
9 : 9√3 : 18
2
x = 9
y = 18
times by 9

6.



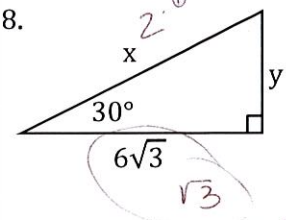

√3
2
1
x = 7√3
y = 2·7 = 14
times by 7 so... all times by 7.

7.




1 : 1 : √2
5 : 5 : 5√2
x = 5
y = 5
√2
times by 5

8.

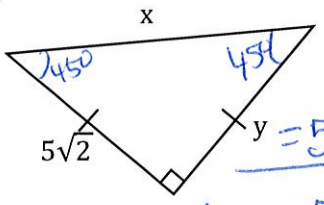



1 : 2 : √3
6 : 12 : 6√3
x = 12
y = 6
√3
this side times by 6, so all times by 6.

Bubble all the correct answers from above. Don't bubble incorrect answers.

○ 9,18 ○ 6,12 ○ 7√3,14 ○ 5√2,5 ○ 3√2,3 ○ 6,16 ○ 5,13 ○ 9,18 ○ 3,3 ○ 3,3√3 ○ 3,3√2 ○ 5,5 ○ 6,6 ○ 4,4√3

9.




45-45-90

| 1 | 1 | √2 |
|---|---|---|
| 5√2 | y | x |

$y = 5\sqrt{2}$

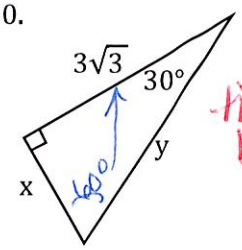
$x = 10$
$y = 5\sqrt{2}$

Setup a proportion: ↓ solve.

$\frac{1}{5\sqrt{2}} = \frac{\sqrt{2}}{x}$

$x = 5\sqrt{4} = 5 \cdot 2 = 10$

10.




30-60-90

1 : √3 : 2

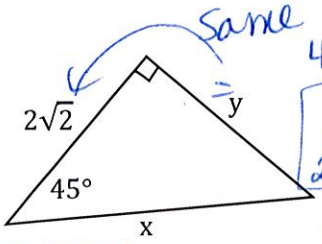
↓·3 ↓·3 ·3

x : 3√3 : y

times by 3

$x = 3 \quad y = 6$

11.




45-45-90

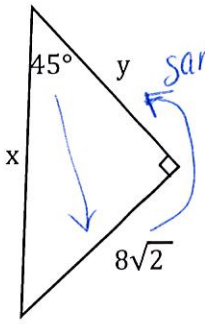
| 1 | 1 | √2 |
|---|---|---|
| ↓ | ↓ | ↓ |
| 2√2 | y | x |

$\frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{x}$

$x = 4\sqrt{4} = 4 \cdot 2 = 8$

$x = 8$
$y = 2\sqrt{2}$

12.




45-45-90

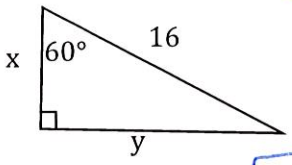
| 1 | 1 | √2 |
|---|---|---|
| ↓ | ↓ | ↓ |
| 8√2 | y | x |

$\frac{1}{8\sqrt{2}} = \frac{\sqrt{2}}{x}$

$x = 8\sqrt{4} = 8 \cdot 2 = 16$

$x = 16$
$y = 8\sqrt{2}$

13.




30-60-90

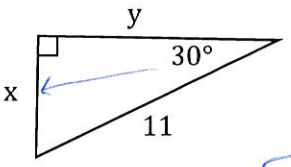
1 : √3 : 2 times

of of ↓ of by 8

x y 16

$x = 8 \quad y = 8\sqrt{3}$

14.




30-60-90

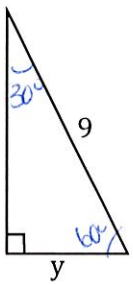
1 : √3 : 2 times by 5.5 or 11/2

↓ ↓

x y 11

$x = 5.5$ or $\frac{11}{2}$ $\quad y = 5.5\sqrt{3}$ or $\frac{11\sqrt{3}}{2}$

15.




30-60-90

1 : √3 : 2

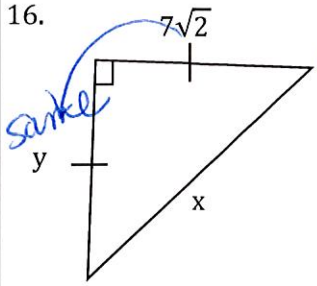
↓ ↓ ↓

y x 9

times by 4.5

$x = 4.5\sqrt{3}$
$y = 4.5$

16.




~~5~~ 45-45-90

| 1 | 1 | √2 |
|---|---|---|
| ↓ | ↓ | ↓ |
| 7√2 | y | x |

$\frac{1}{7\sqrt{2}} = \frac{\sqrt{2}}{x}$

$x = 7\sqrt{4} = 7 \cdot 2 = 14$

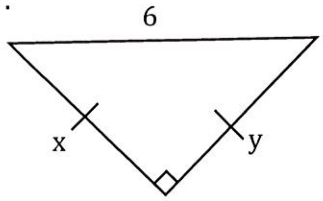
$x = 14 \quad y = 7\sqrt{2}$

---

Bubble all the correct answers from above. Don't bubble incorrect answers.

○ $7\sqrt{2}, 7$ ○ $14, 7\sqrt{2}$ ○ $8, 8\sqrt{3}$ ○ $16, 8\sqrt{2}$ ○ $2\sqrt{3}, 6$ ○ $3\sqrt{2}, 6$ ○ $4, 2\sqrt{3}$ ○ $4, 2\sqrt{2}$ ○ $10, 3\sqrt{2}$ ○ $10, 3\sqrt{3}$ ○ $9, 9\sqrt{3}$ ○ $3, 6$ ○ $5.5, 5.5\sqrt{3}$ ○ $4.5, 4.5\sqrt{3}$

17.




45-45-90
1 : 1 : $\sqrt{2}$
x : y : 6

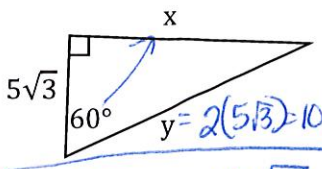
$\frac{\sqrt{2}}{6} = \frac{1}{x}$

$\frac{\sqrt{2}x}{\sqrt{2}} = \frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$x = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$

$x = y = 3\sqrt{2}$

18.



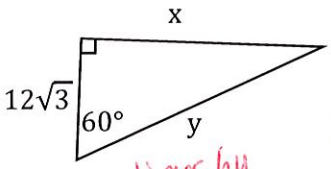

30-60-90
1 : $\sqrt{3}$ : 2
$5\sqrt{3}$ : x : y

$\frac{1}{5\sqrt{3}} = \frac{\sqrt{3}}{x}$

$x = 5\sqrt{9} = 5 \cdot 3 = 15$

$x = 15$ $y = 10\sqrt{3}$

19.



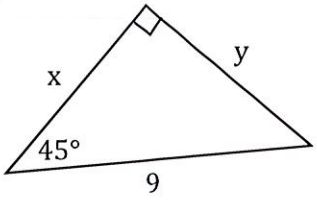

30-60-90
1 $\sqrt{3}$ 2
$\cdot x$ $\cdot 12\sqrt{3}$ $\cdot 12\sqrt{3}$ $\cdot 12\sqrt{3}$
$12\sqrt{3}$ x y

times by $12\sqrt{3}$

$x = 12\sqrt{3} \cdot \sqrt{3} = 12 \cdot 3 = 36$

$y = 24\sqrt{3}$

20.



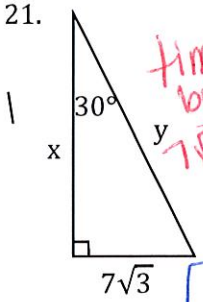

1 : 1 : $\sqrt{2}$
x : y : 9

$\frac{\sqrt{2}}{9} = \frac{1}{x}$

$\frac{\sqrt{2}x}{\sqrt{2}} = \frac{9}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$y = x = \frac{9\sqrt{2}}{2}$

21.

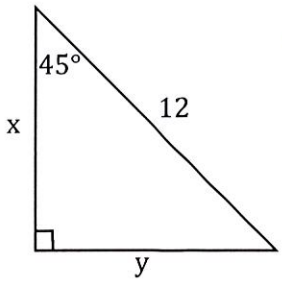



times by $7\sqrt{3}$
1 : $\sqrt{3}$ : 2
$\cdot 7\sqrt{3}$ $\cdot 7\sqrt{3}$ $\cdot 7\sqrt{3}$
$7\sqrt{3}$ x y

$x = 7\sqrt{3} \cdot \sqrt{3} = 7 \cdot 3 = 21$

$y = 14\sqrt{3}$

22.




1 : 1 : $\sqrt{2}$
x y 12

$\frac{\sqrt{2}}{12} = \frac{1}{x}$

$\frac{\sqrt{2}x}{\sqrt{2}} = \frac{12}{\sqrt{2}}$ $\frac{\sqrt{2}}{\sqrt{2}} = \frac{12\sqrt{2}}{2}$

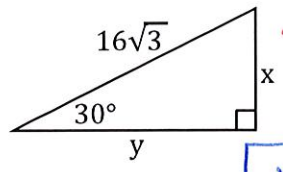
$y = x = 6\sqrt{2}$

---

Bubble all the correct answers from above. Don't bubble incorrect answers.

○ 15,$10\sqrt{3}$ ○ $12\sqrt{2}$,$12\sqrt{2}$ ○ 21,$7\sqrt{3}$ ◉ $6\sqrt{2}$,$6\sqrt{2}$ ○ $7\sqrt{3}$,$21\sqrt{3}$ ○ 36,$24\sqrt{3}$ ○ $3\sqrt{2}$,$3\sqrt{2}$ ○ $\frac{9\sqrt{2}}{2}$,$\frac{9\sqrt{2}}{2}$ ○ $\frac{9}{\sqrt{2}}$,$\frac{9}{\sqrt{2}}$ ○ 9,9

23.




30-60-90 times by $8\sqrt{3}$

$1 : \sqrt{3} : 2$

$8\sqrt{3}$ ↓ $8\sqrt{3}$ ↓ $8\sqrt{3}$

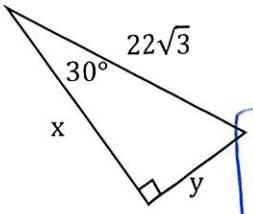
x y $16\sqrt{3}$

$x = 8\sqrt{3}$

$y = 24$

$y = 8\sqrt{3} \cdot \sqrt{3} = 8\sqrt{9} = 8 \cdot 3$

24.




$1 : \sqrt{3} : 2$ times by $11\sqrt{3}$

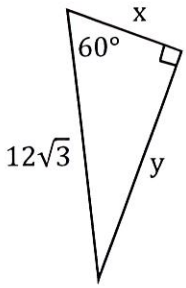
$11\sqrt{3}$ ↓ $11\sqrt{3}$ ↓ $11\sqrt{3}$

y x $22\sqrt{3}$

$x = 11\sqrt{3} \cdot \sqrt{3} = 11 \cdot 3 = 33$

$y = 11\sqrt{3}$

25.




$1 : \sqrt{3} : 2$ times by $6\sqrt{3}$

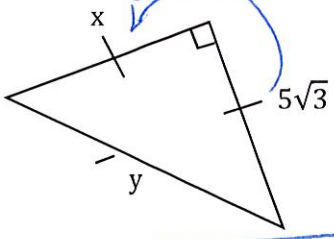
$6\sqrt{3}$ ↓ $6\sqrt{3}$ ↓ $6\sqrt{3}$

x y $12\sqrt{3}$

$x = 6\sqrt{3}$

$y = 6\sqrt{3} \cdot \sqrt{3} = 6 \cdot 3 = 18$

26.




same

1 : 1 : $\sqrt{2}$

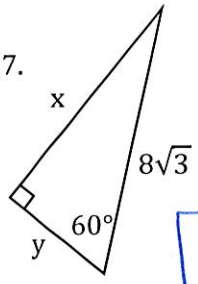
↓ ↓ ↓

$5\sqrt{3}$ x y

$\frac{1}{5\sqrt{3}} = \frac{\sqrt{2}}{y}$

$x = 5\sqrt{3}$ $y = 5\sqrt{6}$

27.




$1 : \sqrt{3} : 2$ times by $4\sqrt{3}$

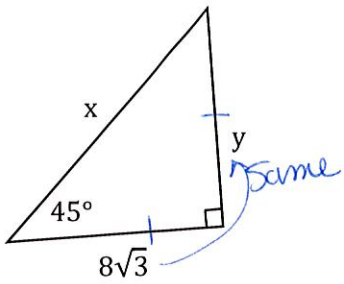
$4\sqrt{3}$ ↓ $4\sqrt{3}$ ↓ $8\sqrt{3}$

y x

$y = 4\sqrt{3}$

$x = 4\sqrt{3} \cdot \sqrt{3} = 4 \cdot 3 = 12$

28.




same

1 : 1 : $\sqrt{2}$

$8\sqrt{3}$ ↓ y ↓ x

$\frac{1}{8\sqrt{3}} = \frac{\sqrt{2}}{x}$

$x = 8\sqrt{6}$

$y = 8\sqrt{3}$

---

Bubble all the correct answers from above. Don't bubble incorrect answers.

○ $8\sqrt{3}$,24 ① 33,$11\sqrt{3}$ ② $5\sqrt{3}$,$5\sqrt{6}$ ○ $8\sqrt{3}$, 8 ○ 12,$4\sqrt{3}$ ○ $5\sqrt{3}$,5 ○ $6\sqrt{3}$,18 ○ $8\sqrt{3}$,$8\sqrt{6}$ ○ $8\sqrt{3}$,$8\sqrt{2}$ ○ 12,24