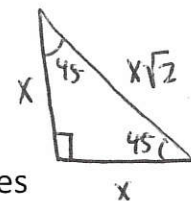
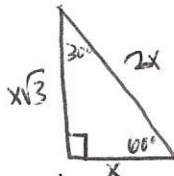
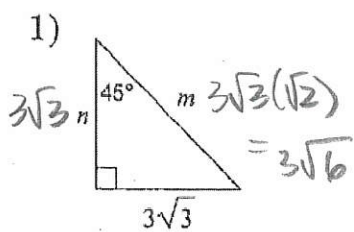


Name: Kly Hour: _____



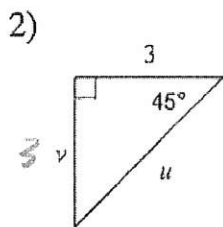
11.6 Special Right Triangles and Complementary Angles

Find the missing side lengths. Leave your answers as radicals in simplest form.



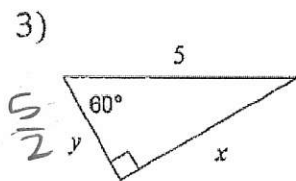
$$m = 3\sqrt{6}$$

$$n = 3\sqrt{3}$$



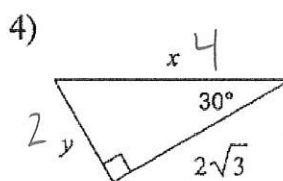
$$v = 3$$

$$u = 3\sqrt{2}$$



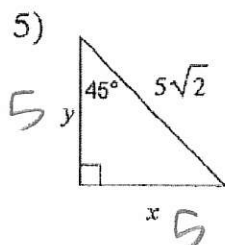
$$x = \frac{5\sqrt{3}}{2}$$

$$y = \frac{5}{2}$$



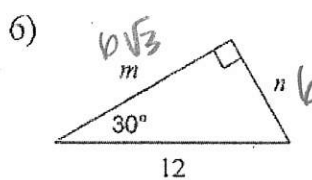
$$x = 4$$

$$y = 2$$



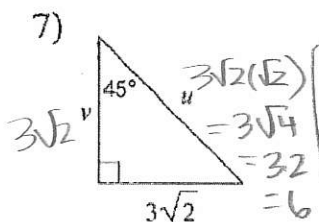
$$x = 5$$

$$y = 5$$



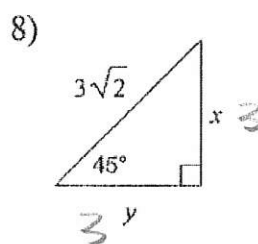
$$m = 6\sqrt{3}$$

$$n = 6$$



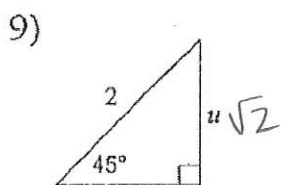
$$u = 6$$

$$v = 3\sqrt{2}$$



$$x = 3$$

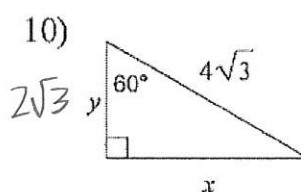
$$y = 3$$



$$u = \sqrt{2}$$

$$v = \sqrt{2}$$

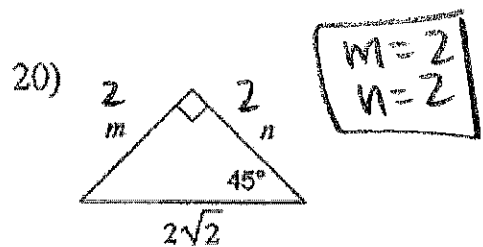
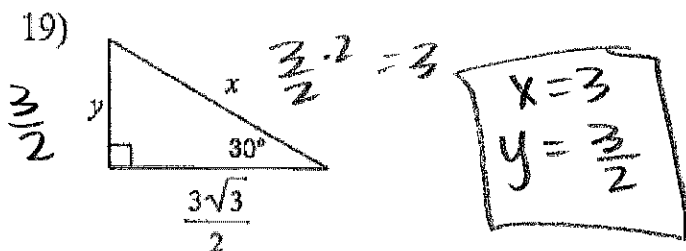
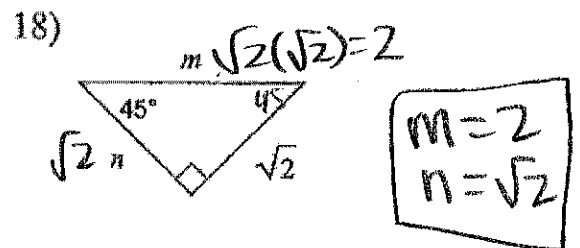
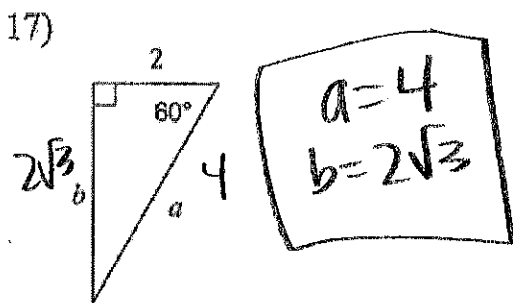
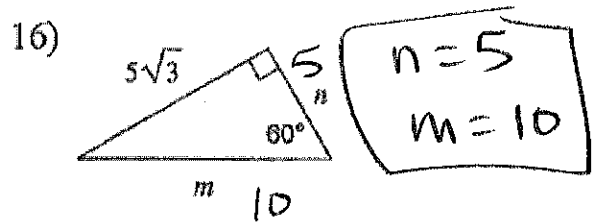
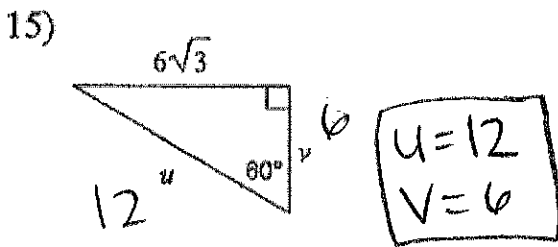
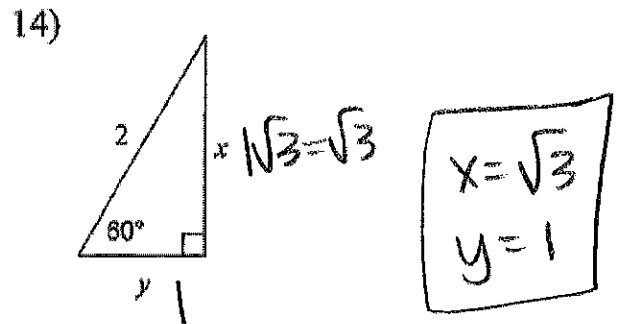
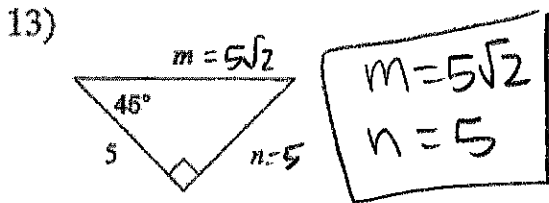
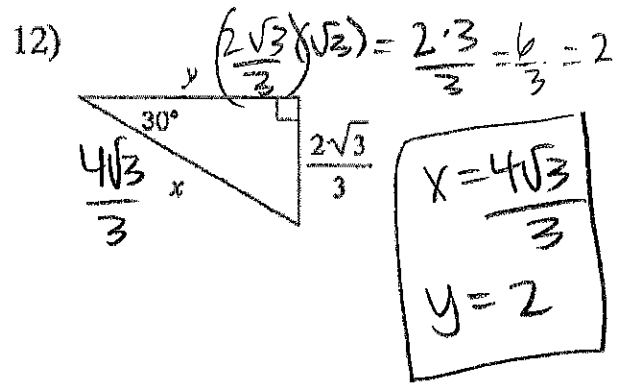
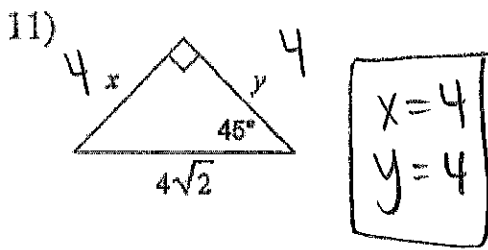
$$\frac{x\sqrt{2}}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$$



$$x = 6$$

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

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



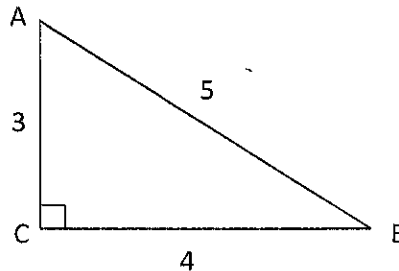
Find the following using the right triangle to the right of problems.

21. $\sin A = \frac{4}{5}$

22. $\cos B = \frac{4}{5}$

23. $\sin B = \frac{3}{5}$

24. $\cos A = \frac{3}{5}$



25. What do you notice about $\sin A$ and $\cos B$?

They're the same!

26. What do you notice about $\sin B$ and $\cos A$?

They're the same!

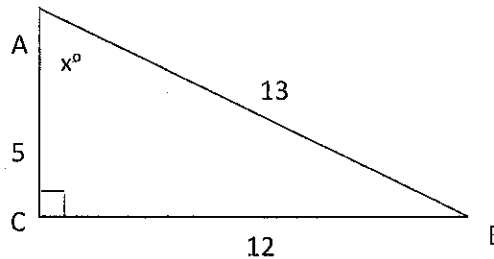
27. Why do you think this occurs in both situations?

Opposite & adjacent switch places

Find the following using the right triangle to the right of problems.

28. $\sin A = \frac{12}{13}$

29. $\cos B = \frac{12}{13}$



30. Write an equation to show that problem 28 and 29 are equal to each other.

$$\sin A = \cos B$$

31. If angle $A = x^\circ$ degrees then angle B would have a measurement of how many degrees in the triangle above. (Hint: Write an equation for it.)

$$(90 - x)^\circ$$

32. Write an equation using the equation from problem 30 and the information from problem 31 about the angle measures.

$$\sin x = \cos(90 - x)$$

33. Will this equation hold true for all angles between 0 and 90 degrees. Explain your reasoning.

Yes, x & y are both positive in quadrant I

Rewrite each equation using complements and the other trig function.

34. $\sin 35^\circ = \cos 55^\circ$

35. $\cos 40^\circ = \sin 50^\circ$

36. $\sin 15^\circ = \cos 75^\circ$

37. $\cos 70^\circ = \sin 20^\circ$

38. $\sin 5^\circ = \cos 85^\circ$

39. $\cos 81^\circ = \sin 9^\circ$

40. $\sin w^\circ = \cos(90 - w)$

41. $\cos t^\circ = \sin(90 - t)$