Use the following triangle to answer each of the following questions.
Give exact answers, you should be able to do this problems without a calculator.

1. Find $\alpha$ given that $\beta = 34.5^\circ$.

2. Find $\beta$ given that $\alpha = 0.45$ rad.

3. Find $\sin(\beta)$ given that $\cos(\alpha) = 0.37$.

4. Find $\cos(\beta)$ given that $b = 7$ and $c = \sqrt{58}$.

5. Find $\sin(\alpha)$ given that $a = 3$ and $b = 4$.

6. Find $\tan(\beta)$ given that $a = 8$ and $c = \sqrt{80}$.

7. Find $\csc(\alpha)$ given that $a = 2$ and $b = 5$.

8. Find $\cot(\alpha)$ given that $a = 12$ and $c = \sqrt{153}$.

9. Find $\sec(\beta)$ given that $a = 5$ and $b = 8$.

10. Find $\sin(\alpha)$ given that $a = 9$ and $b = \sqrt{19}$.

11. Find $a$ given that $\sin(\alpha) = \frac{3}{7}$ and $c = 5$.

12. Find $a$ given that $\sin(\beta) = \frac{3}{5}$ and $c = 5$.

13. Find $\tan(\beta)$ given that $\cos(\alpha) = \frac{2}{5}$ and $b = 4$.

14. Find $\cot(\alpha)$ given that $\cos(\alpha) = \frac{5}{8}$ and $b = 5$.

15. Find $c$ given that $\tan(\alpha) = \frac{1}{2}$ and $b = 5$.

16. Find $\csc(\beta)$ given that $\sec(\alpha) = 5$ and $c = 7$.

17. Find $\cos(\alpha)$ given that $\tan(\alpha) = \frac{3}{2}$ and $a = 9$.

18. Find $a$ given that $\sec(\alpha) = 7$ and $c = 5$.

19. Find $b$ given that $\sin(\beta) = \frac{1}{3}$ and $a = 3$.

20. Find $c$ given that $\cos(\alpha) = \frac{1}{7}$ and $b = 9$. 