

Homework 6 - Math 142**Name:** _____

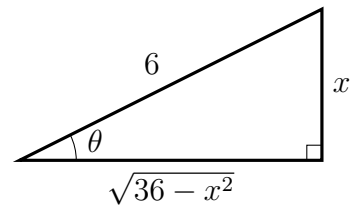
1. Find $\int \sin^3 x \cos^2 x \, dx$.

2. Compute $\int_0^{\pi/3} \tan^3 x \sec^2 x \, dx$.

3. Evaluate $\int \frac{\cos \theta}{\sqrt{\sin \theta}} \, d\theta$.

4. Find $\int \cos^2 \theta \sin^2 \theta \, d\theta$. Hint: Use the half-angle formulas.

5. Use the reference triangle below to help compute $\int \frac{x}{\sqrt{36-x^2}} dx$.



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6. Use a trigonometric substitution to find $\int x^3 \sqrt{x^2-1} dx$.

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7. Find $\int \frac{\sqrt{x^2-5}}{x} dx$.
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