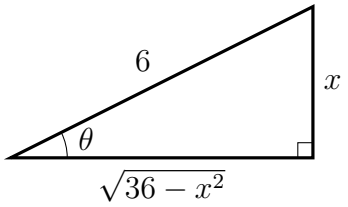
Homework 7 - Math 142 **Name:** _____

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



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

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3. Find $\displaystyle\int \frac{\sqrt{x^2-5}}{x}\,dx$.

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4. Find $\displaystyle\int \frac{\sqrt{1-x^2}}{x^2}\,dx$.

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5. Use partial fractions to evaluate $\int \frac{x+5}{x^2-5x+4}\,dx$.

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6. Compute $\int \frac{1}{x^2-9}\,dx$.

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7. Evaluate $\int \frac{x^3}{x-4}\,dx$. Hint: Use polynomial long division to simplify first.

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8. Evaluate $\int \frac{4x^2-9x+4}{x\,(x-2)\,(x-1)}\,dx$.
