QUIZ 2 - MATH 152 YOUR NAME:

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Use substitution to evaluate
$$\int \frac{\tan^{-1} x}{1+x^2} dx$$
.

2. Use inverse trigonometric integration and substitution to evaluate the indefinite integral $\int \frac{x+3}{\sqrt{1-x^2}} dx$. (Hint: Use the sum rule.) 3. The following figure depicts the graphs of $f(x) = x^3 - 6x$ and of $g(x) = 8 - 3x^2$. These two graphs intersect at the points with x-coordinates x = -4, x = -1 and x = 2. Set up an integration formula for computing the area of the shaded region. (Do not perform the integration.)

