Math 141 (Section 501) **Quiz 14 (take-home)** **due December 2, 2004**

Name _____

No calculators allowed!

1. (4.5 points) Evaluate the following definite integrals.

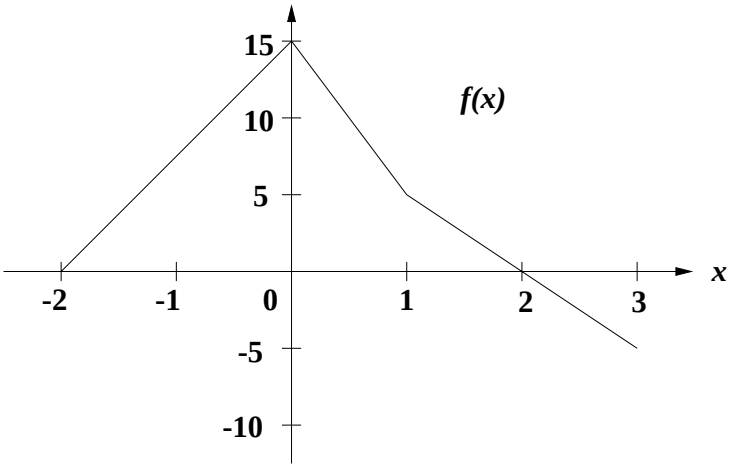
   (a) $\int_1^2 (6x - 10)\, dx$

   (b) $\int_0^{\pi/2} \sin^2(3t) \cos(3t)\, dt$

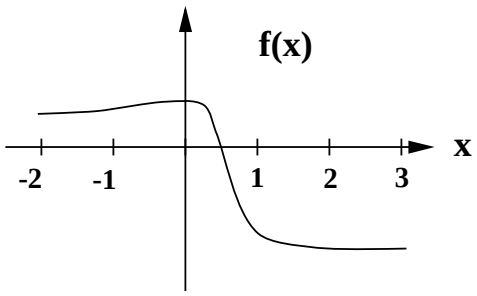
   (c) $\int_6^{15} \dfrac{x}{\sqrt{x^2 + 64}}\, dx$

2. (1.5 points) Sketch the graph of $f(x) = 2 + \cos x$ on the interval $[0, \pi]$ and shade in the area between the x-axis and this curve on that interval. Now compute the exact area of this shaded region.

3. (1 point) Using the graph of $f(x)$ shown below, compute the exact value of $\int_{-2}^{3} f(x)\, dx$.

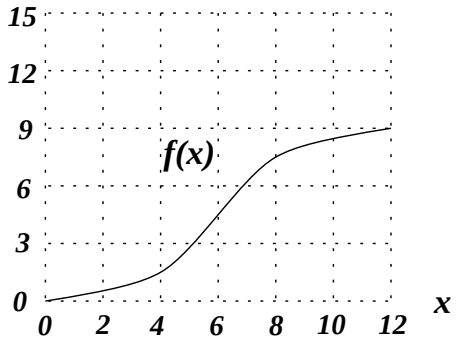


4. (1 point) Using the graph of $f(x)$ shown below, determine which one of the following choices could possibly be the value of the definite integral $\int_{-2}^{3} f(x)\, dx$.



(a) 15 (b) 10 (c) 5 (d) 0 (e) -5

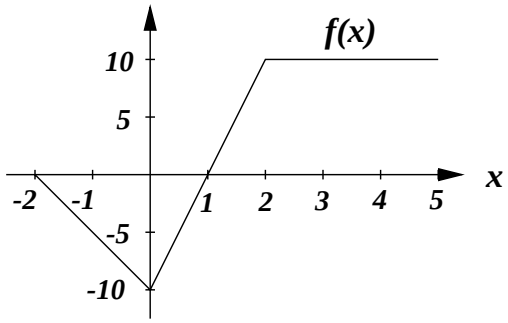
5. (1 point) One of the ten choices below gives the exact value of the definite integral $\int_0^{12} f(x)\ dx$. Circle the correct choice.



(a) 0 (b) 18 (c) 36 (d) 54 (e) 72

(f) 90 (g) 108 (h) 126 (i) 144 (j) 162

6. (1 point) One of the ten choices below gives the exact value of the definite integral $\int_{-2}^{5} f(x)\ dx$. Circle the correct choice.



(a) -5 (b) 0 (c) 5 (d) 10 (e) 15

(f) 20 (g) 25 (h) 30 (i) 35 (j) 40