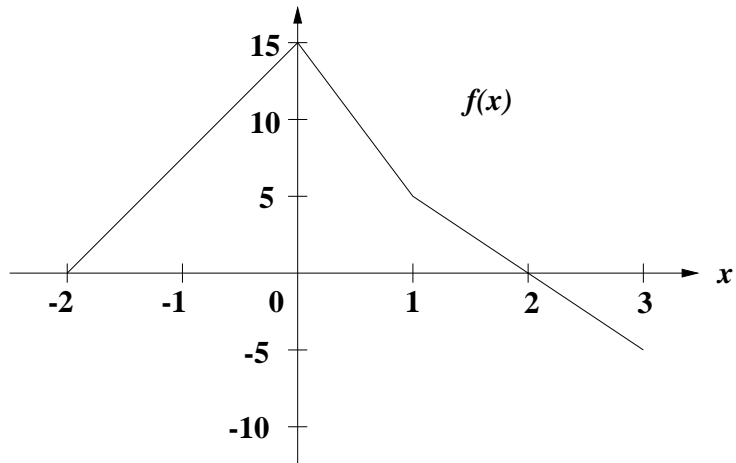
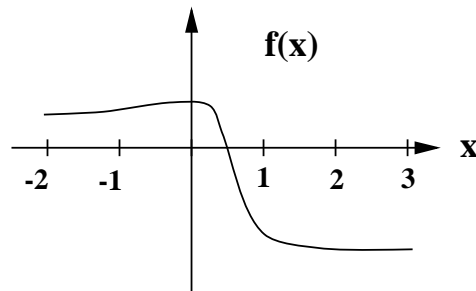


1. Using the graph of  $f(x)$  shown below, compute the exact value of  $\int_{-2}^3 f(x) dx$ .

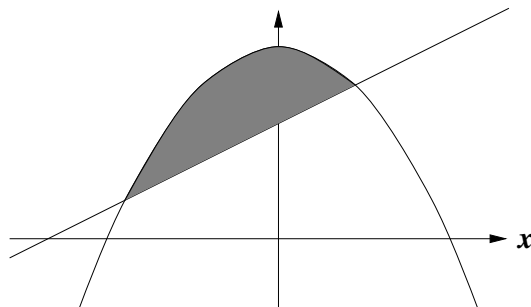


2. Using the graph of  $f(x)$  shown below, determine which one of the following choices could possibly be the value of the definite integral  $\int_{-2}^3 f(x) dx$ .

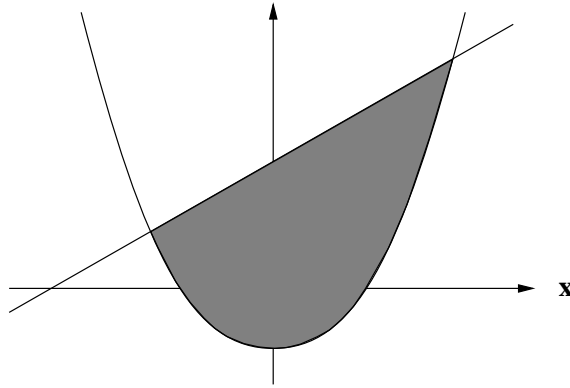


- (a) 15                      (b) 10                      (c) 5                      (d) 0                      (e) -5

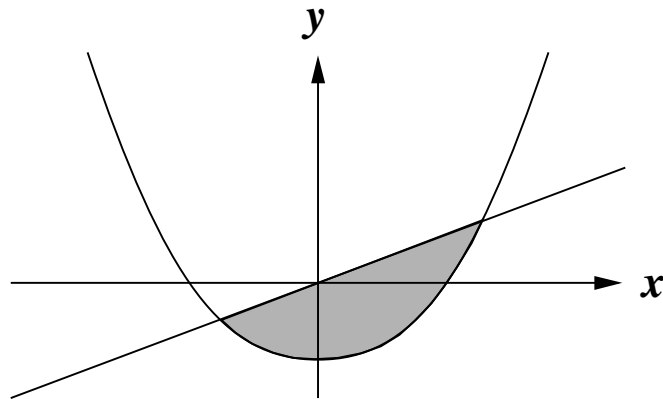
3. The graphs of  $f(x) = x + 3$  and  $g(x) = 5 - x^2$  are sketched below and the area between the two curves is shaded in. Determine the exact area of this shaded region.



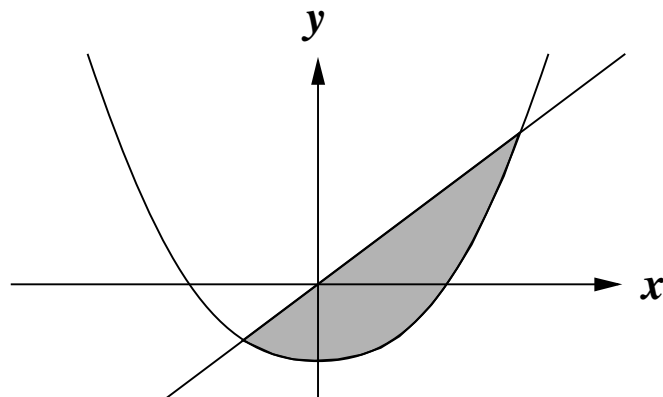
4. The graphs of  $f(x) = x + 4$  and  $g(x) = x^2 - 2$  are sketched below and the area between the two curves is shaded in. Find the exact area of this shaded region.



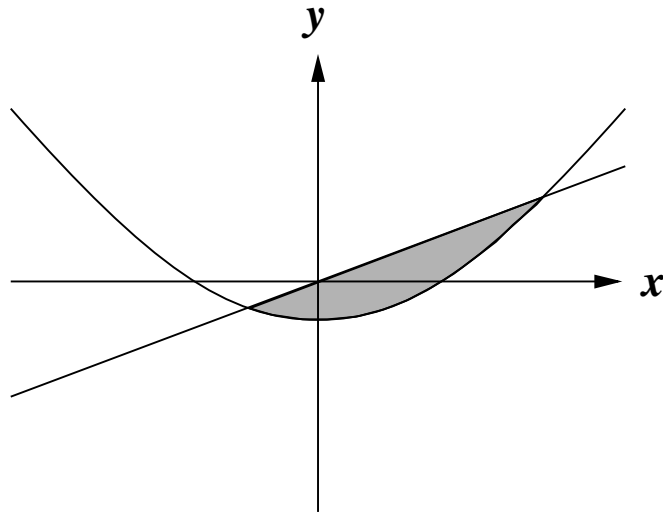
5. The graphs of  $f(x) = x^2 - 15$  and  $g(x) = 2x$  are sketched below and the area between the two curves is shaded in. Determine the exact area of this shaded region.



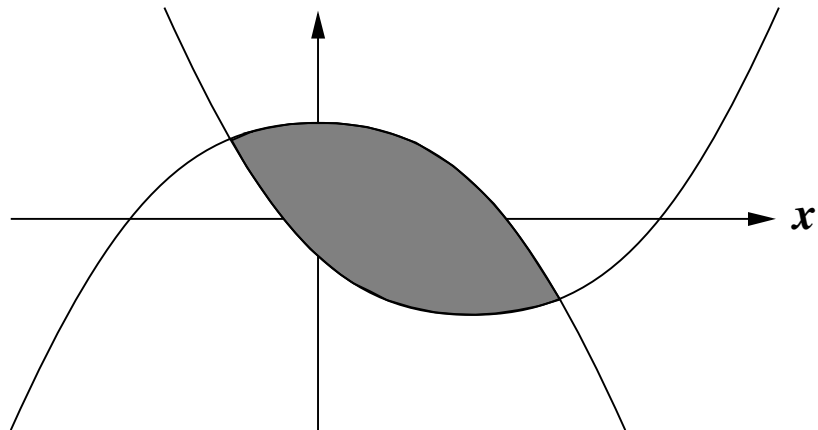
6. The graphs of  $f(x) = x^2 - 21$  and  $g(x) = 4x$  are sketched below and the area between the two curves is shaded in. Determine the exact area of this shaded region.



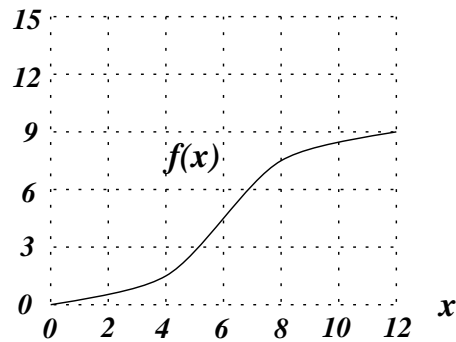
7. The graphs of  $f(x) = x^2 - 14$  and  $g(x) = 5x$  are sketched below and the area between the two curves is shaded in. Determine the exact area of this shaded region.



8. The graphs of  $f(x) = x^2 - 8x - 4$  and  $g(x) = 20 - x^2$  are sketched below and the area between the two curves is shaded in. Find the exact area of this shaded region.

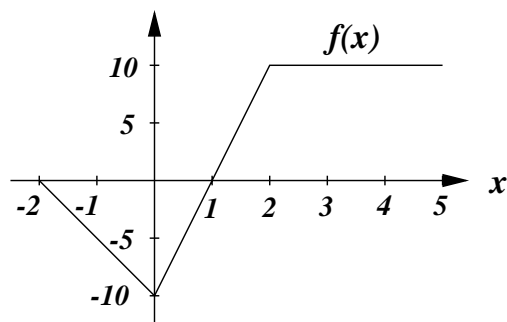


9. One of the ten choices below gives the exact value of the definite integral  $\int_0^{12} f(x) dx$ . Circle the correct choice.



- (a) 0                      (b) 18                      (c) 36                      (d) 54                      (e) 72  
 (f) 90                      (g) 108                      (h) 126                      (i) 144                      (j) 162

10. 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