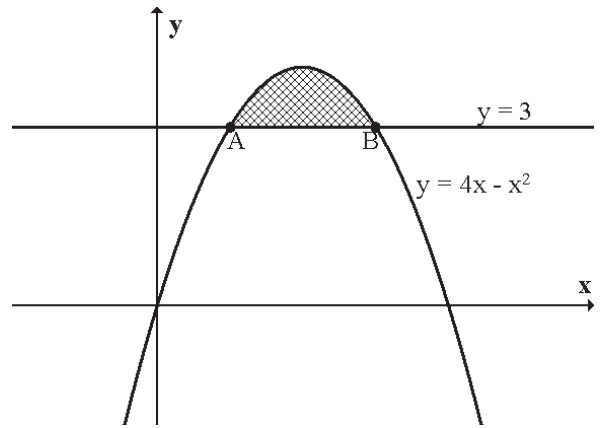


## Area Between two Curves

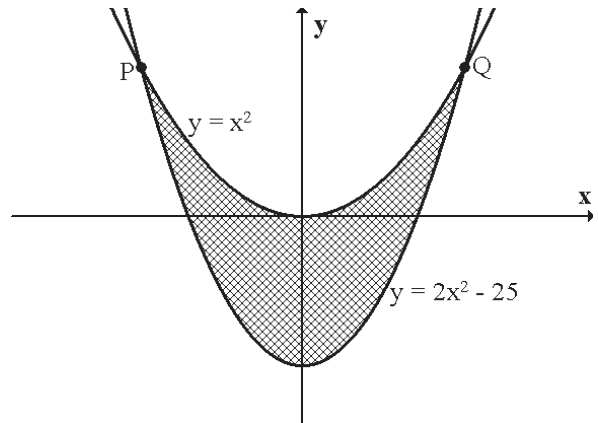
1. The diagram opposite shows the curve  $y = 4x - x^2$  and the line  $y = 3$ .

- (a) Find the coordinates of A and B.  
 (b) Calculate the shaded area.



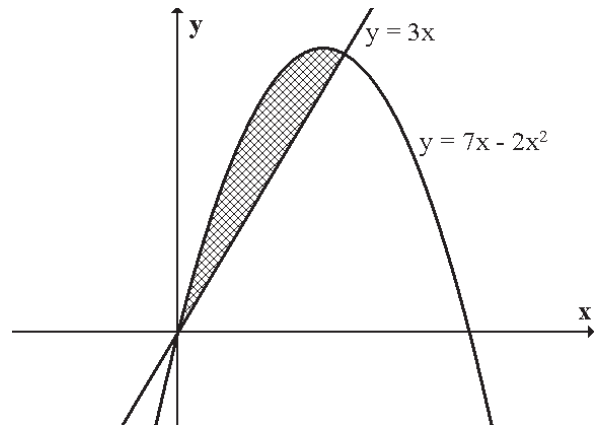
2. The curves with equations  $y = x^2$  and  $y = 2x^2 - 25$  intersect at P and Q.

Calculate the area enclosed between the curves.



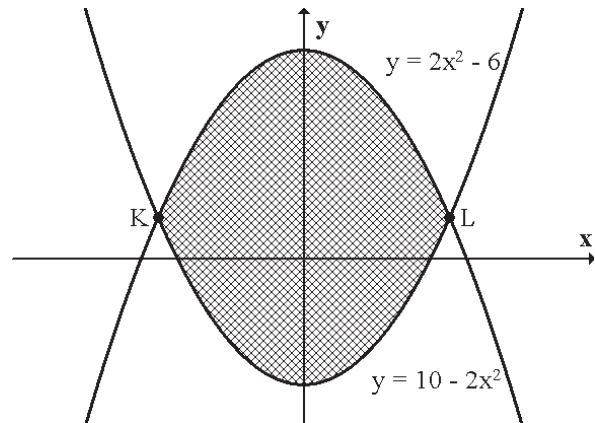
3. The diagram opposite shows the curve  $y = 7x - 2x^2$  and the line  $y = 3x$ .

Calculate the shaded area.



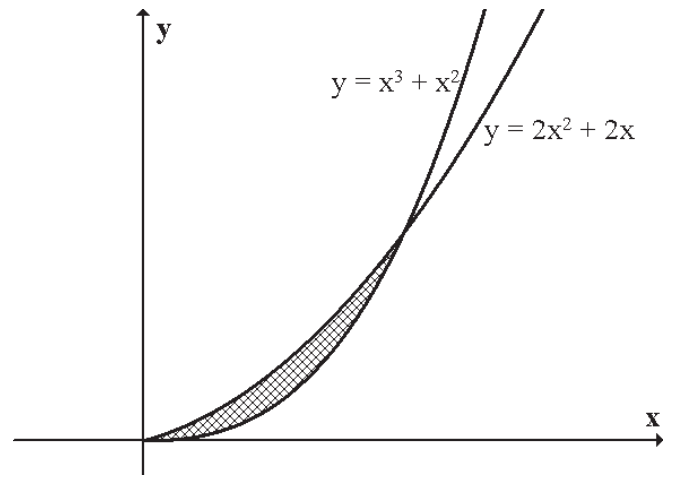
4. The curves with equations  $y = 2x^2 - 6$  and  $y = 10 - 2x^2$  intersect at K and L.

Calculate the area enclosed by these two curves.



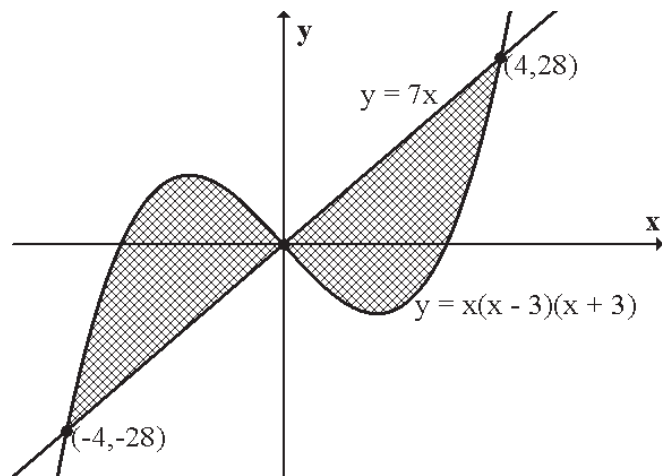
5. The diagram opposite shows part of the curves  $y = x^3 + x^2$  and  $y = 2x^2 + 2x$ .

Calculate the shaded area.



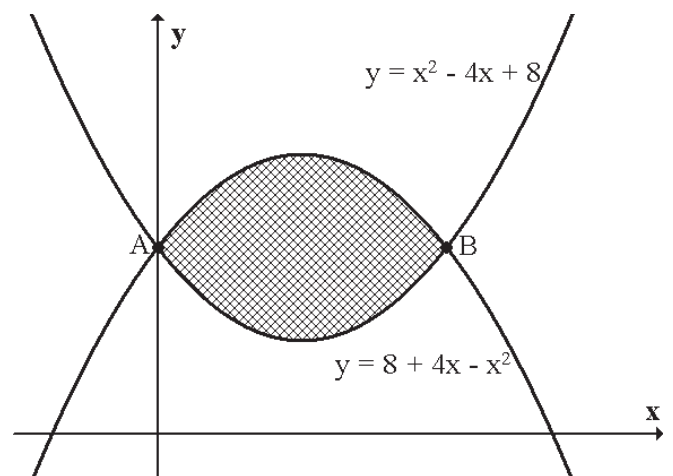
6. The curve  $y = x(x - 3)(x + 3)$  and the line  $y = 7x$  intersect at the points  $(0,0)$ ,  $(-4,-28)$  and  $(4,28)$ .

Calculate the area enclosed by the curve and the line.



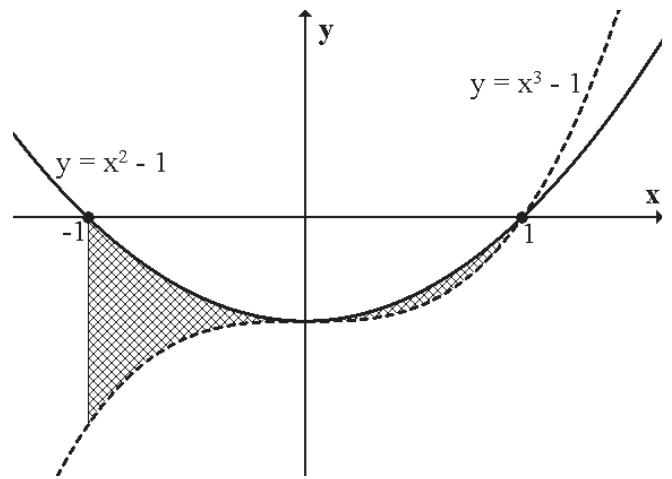
7. The parabolas  $y = x^2 - 4x + 8$  and  $y = 8 + 4x - x^2$  intersect at A and B.

- (a) Find the coordinates of A and B.  
 (b) Calculate the shaded area.



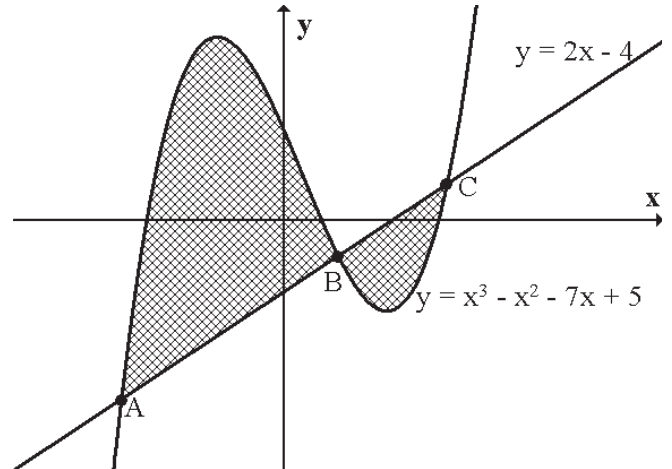
8. The diagram shows parts of the curves  $y = x^3 - 1$  and  $y = x^2 - 1$ .

Calculate the shaded area.



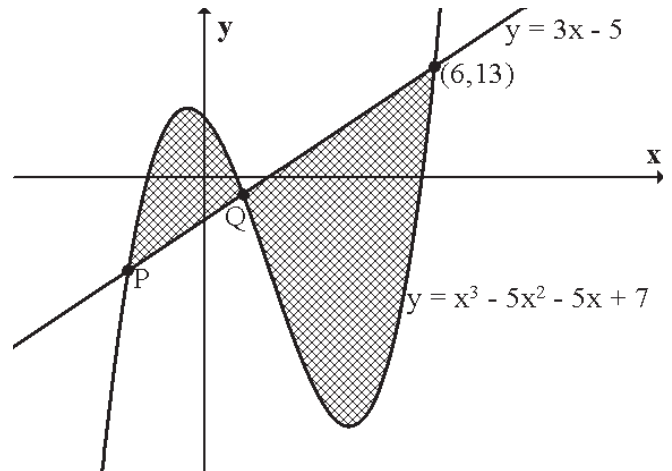
9. The curve  $y = x^3 - x^2 - 7x + 5$  and the line  $y = 2x - 4$  are shown opposite.

- (a) B has coordinates  $(1, -2)$ . Find the coordinates of A and C.  
 (b) Hence calculate the shaded area.



10. The diagram shows the line  $y = 3x - 5$  and the curve  $y = x^3 - 5x^2 - 5x + 7$ .

- (a) Find the coordinates of P and Q.  
 (b) Calculate the shaded area.



11. The diagram opposite shows an area enclosed by 3 curves:

$$y = x(x + 3), \quad y = \frac{4}{x^2} \quad \text{and} \quad y = x - \frac{1}{4}x^2$$

- (a) P and Q have coordinates  $(p, 4)$  and  $(q, 1)$ .  
 Find the values of p and q.  
 (b) Calculate the shaded area.

