

- ① (1) 6  
(2) 3  
(3)  $\frac{5}{9}$   
(4)  $-\frac{8}{3}$

- ② (1)  $1 < a < 4$   
(2)  $\frac{5}{2}$

- ③ (1)  $P(\sqrt{3}, 0), Q\left(\frac{\sqrt{3}}{2}, \frac{3}{2}\right)$   
(2)  $\frac{\sqrt{21}}{14}$