

1

(1) $16+\sqrt{3}i$

(2) $\frac{1}{64}$

(3) $x \leq -\frac{a}{\sqrt{2}} \quad \frac{a}{\sqrt{2}} \leq x$

(4) $\vec{OH} = \frac{1}{9}\vec{OA} + \frac{2}{3}\vec{OB}$

(5) $f(x) = x^2 - 2x$

(6) $a = -6, b = 9, c = -1$

2

(1) $t = \frac{bx}{x^2 + a(a+b)}$

(2) $t_{max} = \frac{b}{2\sqrt{a(a+b)}}$

(3) $a = \frac{\pi}{6}$

3

(1) 0

(2) 1

(3) 0

(4) -1

(5) $n-1$

(6) $n-3$

(7) $n-2$

(8) 60

(9) $a_n = \frac{60}{(n-2)(n-3)}$

(10) $\frac{n-3}{n-2} \cdot 60$

(11) $\frac{1}{100} \times 60^{99}$

(12) 175

(13) 145