

1.

$$(1) \quad 20250 \quad (2) \quad x=3 \quad (3) \quad 505 \quad (4) \quad n=9$$

$$(5) \quad 34 \text{桁} \quad \text{最高位} 6$$

2.

$$(1) \quad \int_0^{\frac{\pi}{2}} \sin^n x = I_n$$

$$(2) \quad I_n = \frac{n-1}{n} I_{n-2}$$

$$(3) \quad I_{2n+1} I_{2n} = \frac{\pi}{2(2n+1)}$$

$$(4) \quad \frac{\pi}{4}$$

$$(5) \quad \frac{1}{\pi}$$

3.

$$(1) \quad \text{直線 } y = ax - 2\sqrt{a}$$

$$\text{点 } P \quad (3\sqrt{a}, \sqrt{a}) \quad \text{点 } Q \left(\frac{1}{\sqrt{a}}, -\sqrt{a} \right)$$

$$(2) \quad d = 2\sqrt{2} \quad \text{そのとき } a = 1$$

4.

$$(1) \quad \frac{1}{5} \quad (2) \quad \frac{4}{25} \quad (3) \quad \frac{16}{125} \quad (4) \quad \frac{64}{125} \quad (5) \quad \frac{20}{61}$$