

$$a_n = 4n + 1$$

$$a_1 = 4 \times 1 + 1 = 5 \quad \boxed{5}$$

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$$a_n = 4n + 1$$

$$a_1 = 4 \times 1 + 1 = 5$$

$$S_n = \frac{n}{2} (a_1 + a_n)$$

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$$\frac{1}{2} (5 + 125) = 65$$

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$$a_n = 4 \times 29 + 1 = 117$$

$$a_{21} = 4 \times 21 + 1 = 85$$

$$117 + 111 + 105 + 99 = 432 \quad \boxed{432}$$

$$a_{20} = 4 \times 20 + 1 = 81$$

$$a_{22} = 4 \times 22 + 1 = 89$$

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$$a_n = a + (n-1)d$$

$$a = 1 + \sqrt{3}$$

$$d = 2 - (1 + \sqrt{3}) = 1 - \sqrt{3}$$

$$\Rightarrow a_n = a_1 + (n-1)d$$

$$a_{12} = a + 11d = (1 + \sqrt{3}) + 11(1 - \sqrt{3}) = 12 - 10\sqrt{3}$$

$$a_{10} = a + 9d = (1 + \sqrt{3}) + 9(1 - \sqrt{3}) = 10 - 8\sqrt{3}$$

$$\Rightarrow 12 - 10\sqrt{3}$$

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$$x \times y = \frac{ax + ay}{2} \Rightarrow x \times y = \frac{ax + ay}{2} \Rightarrow y = x + 1$$

$$x = \frac{x + y}{2} \Rightarrow x + y = 2 \Rightarrow x + (x + 1) = 2 \Rightarrow x = 1$$

$$y = x + 1 = 1 + 1 = 2$$

$$\Rightarrow x \times y = 1 \times 2 = 2 \quad \boxed{2}$$

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$$a_4 - a_1 = a_3 - a_2 \Rightarrow (4x - 1) - (4x - 4) = 4x - (4x - 1) \Rightarrow x = \frac{1}{4}$$

$$d = a_2 - a_1 = (4x - 1) - (4x - 4) = 3 \Rightarrow$$

$$a_1 = 4x - 4 = 4 \times \frac{1}{4} - 4 = 1 - 4 = -3$$

$$a_4 = a_1 + 3d = -3 + 3 \times 3 = 6 \quad \boxed{6}$$

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$a_1 = \sqrt{r^2 + v^2}$ $a_2 = \sqrt{r^2 + v^2}$ $a_3 = \sqrt{r^2 + v^2}$ $a_4 = \sqrt{r^2 + v^2}$ $a_5 = \sqrt{r^2 + v^2}$ $a_6 = \sqrt{r^2 + v^2}$ $a_7 = \sqrt{r^2 + v^2}$ $a_8 = \sqrt{r^2 + v^2}$ $a_9 = \sqrt{r^2 + v^2}$ $a_{10} = \sqrt{r^2 + v^2}$

$$a_1 + a_2 + a_3 = a + (a+d) + (a+r_d) = r_a + r_d + r = a + d = \checkmark$$

$$a_4 + a_5 + a_6 = a + (a+r_d) + (a+r_d) = r_a + r_d + r_d = 10a = a + r_d = \checkmark$$

$$(a + r_d)(a + d) = d = \boxed{r_a}$$

$$a + r_1 = v = a_1 = -r_1 \Rightarrow a_w = -r_1 + a_1 = r_a \Rightarrow a_w - a_v + a_1 = r_a + v + r_1 = r_1 \Rightarrow \frac{r_1}{-r_1} = \boxed{-1}$$

$$a_r = -r_1 + r_1 = v$$

$$a_1 + a_2 + a_3 = a_4(a+d) + (a+r_d) \geq r_a + r_d = a + d = \checkmark$$

$$a_4 + d_1 = (a+r_d) + (a+r_d) = r_a + r_d = r_a$$

$$r(a-d) + v_d = r_a \Rightarrow d = r \Rightarrow a = a - r = \checkmark$$

$$a_1 = r + q + r = \boxed{r_a}$$

$$S_9 = \frac{9}{2}(r_a + r_d) \Rightarrow \frac{9}{2}(r_a + r_d) = d = r_a$$

$$S_9 = \frac{9}{2}(r_a + r_d)$$

$$a_{v_0} = a + r_d = a + r(r_a) = r_9 a = \frac{r_a}{r_a} \boxed{r_a}$$

$$a_w = a + r_d = a + r(r_a) = r_a$$

$$a_v = a + r_d = r_a \Rightarrow 1 + r_d = r_a \Rightarrow d = r$$

$$a_8 = a + r_d = 1 + r_x = \boxed{r_a}$$

$$b_8 = a + r_d = r_r = r_1 + r_d = d = -a \Rightarrow$$

$$a_1 = r_1, a_v = r_r, a_w = r_1, a_8 = r_r, a_5 = r_1, a_6 = r_r$$

$$\Rightarrow \boxed{\frac{r_a}{r_a}}$$