

Hw

(1) (b) 3

(2) (b) 5

(3) (d) -1

$$\begin{aligned}
 (4) \quad AB &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\
 &= \sqrt{[a - b - (a + b)]^2 + [-a - b - (a - b)]^2} \\
 &= \sqrt{[\cancel{a} - b - \cancel{a} - b]^2 + [-\cancel{a} - b - \cancel{a} + \cancel{b}]^2} \\
 &= \sqrt{(-2b)^2 + (-2a)^2} \\
 &= \sqrt{4b^2 + 4a^2} = \sqrt{4(a^2 + b^2)} \\
 &= 2\sqrt{a^2 + b^2}
 \end{aligned}$$

(5) (d) 708 -1

(6) (b) collinear

(7) (a) $2a = b$

(8) (c) 0

(9) (d) 5

$$\begin{aligned}
 (10) \quad AB &= \sqrt{(-2-1)^2 + (3-2)^2} = \sqrt{(-3)^2 + (1)^2} = \sqrt{9+1} = \sqrt{10} \\
 BC &= \sqrt{(3 - (-2))^2 + (-4-3)^2} = \sqrt{(3+2)^2 + (-1)^2} = \sqrt{(-1)^2 + (5)^2} \\
 &= \sqrt{1+25} = \sqrt{26} \\
 &= 5\sqrt{2}
 \end{aligned}$$

$$\begin{aligned}
 AC &= \sqrt{(-3-1)^2 + (-4-2)^2} \\
 &= \sqrt{(-4)^2 + (-6)^2} = \sqrt{16+36} = \sqrt{52} = 2\sqrt{13}
 \end{aligned}$$