Zadatak 16.   Dužina $\overline{AB}$ je promjer kružnice. Napiši njezinu jednadžbu ako je:

1) $A(-3, 5)$, $B(5, 1)$;   2) $A(3, -1)$, $B(-1, 2)$;

3) $A(7, -5)$, $B(-1, 1)$;

4) $A(-3, 6)$, $B(5, -2)$.

Rješenje.

1) $S\left(\dfrac{-3+5}{2}, \dfrac{5+1}{2}\right) = (1, 3)$

$r = \dfrac{d(A, B)}{2} = \dfrac{\sqrt{(5+3)^2 + (1-5)^2}}{2} = \dfrac{\sqrt{64+16}}{2} = 2\sqrt{5}$

$(x-1)^2 + (y-3)^2 = 20\,;$

2) $S\left(\dfrac{3-1}{2}, \dfrac{-1+2}{2}\right) = \left(1, \dfrac{1}{2}\right)$

$r = \dfrac{d(A, B)}{2} = \dfrac{\sqrt{(-1-3)^2 + (2+1)^2}}{2} = \dfrac{\sqrt{16+9}}{2} = \dfrac{5}{2}$

$(x-1)^2 + \left(y - \dfrac{1}{2}\right)^2 = \dfrac{25}{4}\,;$

3) $S\left(\dfrac{7-1}{2}, \dfrac{-5+1}{2}\right) = (3, -2)$

$r = \dfrac{d(A, B)}{2} = \dfrac{\sqrt{(-1-7)^2 + (1+5)^2}}{2} = \dfrac{\sqrt{64+36}}{2} = 5$

$(x-3)^2 + (y+2)^2 = 25\,;$

4) $S\left(\dfrac{-3+5}{2}, \dfrac{6-2}{2}\right) = (1, 2)$

$r = \dfrac{d(A, B)}{2} = \dfrac{\sqrt{(5+3)^2 + (-2-6)^2}}{2} = \dfrac{\sqrt{64+64}}{2} = 4\sqrt{2}$

$(x-1)^2 + (y-2)^2 = 32\,.$