

Worksheet: Equation of a Circle Passing through Three Points



Q1: Find the equation of the circle that passes through the points $A(-4, -3)$, $B(-3, -4)$, and $C(-2, -3)$.

A $(x - 3)^2 + (y - 3)^2 = 1$

B $(x + 6)^2 + (y + 6)^2 = 2$

C $(x + 3)^2 + (y + 3)^2 = 1$

D $(x + 2)^2 + (y + 3)^2 = 2$



Question Video

Q2: Find the equation of the circle that passes through the points $A(2, -1)$, $B(5, 2)$, and $C(2, 5)$.

A $(x + 2)^2 + (y + 2)^2 = 9$

B $(x - 4)^2 + (y - 4)^2 = 6$

C $(x - 2)^2 + (y - 2)^2 = 9$

D $(x - 2)^2 + (y - 5)^2 = 18$



Question Video

Q3: Find the equation of the circle that passes through the points $A(6, 1)$, $B(-3, 10)$, and $C(-12, 1)$.

A $(x - 3)^2 + (y + 1)^2 = 81$

B $(x + 6)^2 + (y - 2)^2 = 18$

C $(x + 3)^2 + (y - 1)^2 = 81$

D $(x + 12)^2 + (y - 1)^2 = 162$



Question Video

Q4: Find the equation of the circle that passes through the points $A(8, 7)$, $B(1, 8)$, and $C(0, 1)$.

A $(x + 4)^2 + (y + 4)^2 = 25$

B $(x - 8)^2 + (y - 8)^2 = 10$

C $(x - 4)^2 + (y - 4)^2 = 25$

D $x^2 + (y - 1)^2 = 50$



Question Video

Q5: Find the equation of the circle that passes through the points $A(1, -6)$, $B(0, 1)$, and $C(-7, 0)$.

A $(x - 3)^2 + (y - 3)^2 = 25$

B $(x + 6)^2 + (y + 6)^2 = 10$

C $(x + 3)^2 + (y + 3)^2 = 25$

D $y^2 + (x + 7)^2 = 50$



Question Video

Q6: Find the equation of the circle that passes through the points $A(12, -2)$, $B(4, 6)$, and $C(-4, -2)$.

A $(x + 4)^2 + (y - 2)^2 = 64$

B $(x - 8)^2 + (y + 4)^2 = 16$

C $(x - 4)^2 + (y + 2)^2 = 64$

D $(x + 4)^2 + (y + 2)^2 = 128$



Question Video

Q7: Find the equation of the circle that passes through the points $A(5, 4)$, $B(-2, 5)$, and $C(-3, -2)$.

A $(x + 1)^2 + (y + 1)^2 = 25$

B $(x - 2)^2 + (y - 2)^2 = 10$

C $(x - 1)^2 + (y - 1)^2 = 25$

D $(x + 3)^2 + (y + 2)^2 = 50$



Question Video

Q8: Find the equation of the circle that passes through the points $A(2, 3)$, $B(-3, 8)$, and $C(-8, 3)$.

A $(x - 3)^2 + (y + 3)^2 = 25$

B $(x + 6)^2 + (y - 6)^2 = 10$

C $(x + 3)^2 + (y - 3)^2 = 25$

D $(x + 8)^2 + (y - 3)^2 = 50$



Question Video

Q9: Find the equation of the circle that passes through the points $A(-4, -2)$, $B(-6, -4)$, and $C(-4, -6)$.



Question Video

A $(x - 4)^2 + (y - 4)^2 = 4$

B $(x + 8)^2 + (y + 8)^2 = 4$

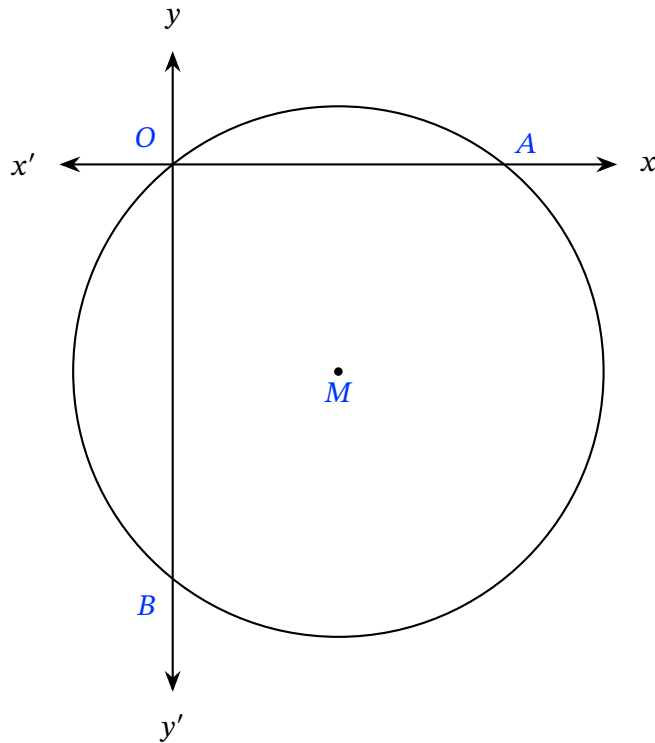
C $(x + 4)^2 + (y + 4)^2 = 4$

D $(x + 4)^2 + (y + 6)^2 = 8$

Q10: Determine the general equation of the shown circle M passing through the origin point and the two points $A(8, 0)$ and $B(0, -10)$.



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A $x^2 + y^2 + 10x - 8y = 0$

B $x^2 + y^2 - 8x + 10y = 0$

C $x^2 + y^2 + 8x - 10y = 0$

D $x^2 + y^2 - 16x + 20y = 0$

Q11: Find the general equation of the circle through the origin that also passes through $(12, 0)$ and $(0, 16)$.

A $x^2 + y^2 - 12x - 16y = 0$

B $x^2 + y^2 + 12x + 16y = 0$

C $x^2 + y^2 - 24x - 32y + 300 = 0$

D $x^2 + y^2 - 6x - 8y = 0$

Q12: Find the general form of the equation of a circle that touches the x -axis and passes through the two points $(-6, -9)$ and $(1, -2)$.

A $x^2 + y^2 + 6x + 10y + 9 = 0, x^2 + y^2 - 18x + 34y + 81 = 0$

B $x^2 + y^2 + 6x + 10y + 6 = 0, x^2 + y^2 - 18x + 34y + 81 = 0$

C $x^2 + y^2 + 3x + 5y + 9 = 0, x^2 + y^2 - 18x + 34y + 81 = 0$

D $x^2 + y^2 + 6x + 10y + 25 = 0, x^2 + y^2 - 18x + 34y + 289 = 0$

Q13: Find the centre of the circle through points $A(3, 1)$, $B(1, 2)$, and $C(-1, -2)$.

A $(2, 0)$

B $(1.5, 0.5)$

C $(0, 1.5)$

D $(1, -0.5)$

Q14: The points $A(1, -1)$, $B(-1, 5)$, $C(17, 11)$, and $D(19, 5)$ form a rectangle. What is the equation of the circle that contains all four points?

A $(x - 9)^2 + (y - 5)^2 = 100$

B $(x + 9)^2 + (y + 5)^2 = 400$

C $(x + 9)^2 + (y - 5)^2 = 360$

D $(x - 9)^2 + (y + 5)^2 = 40$

Q15: The coordinates for three of a group of aerialists in a circular formation are $G(23, -9)$, $H(12, 2)$, and $J(12, -20)$. If each unit represents 1 foot, determine the diameter of their circular formation.

A 44 ft

B 33 ft

C 13 ft

D 11 ft

E 22 ft

Q16: How many circles can pass through three vertices of a parallelogram?

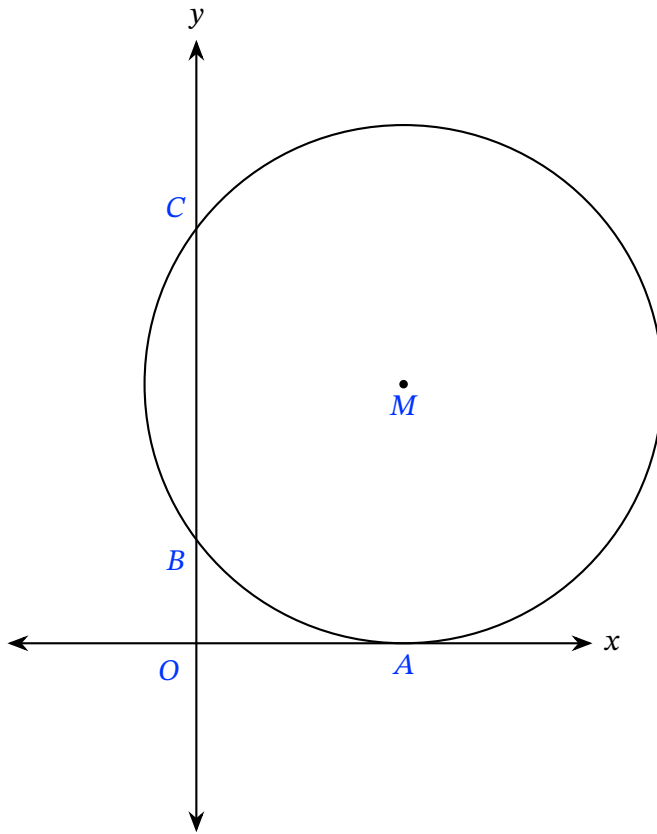
A 1

B infinite

C 2

D 0

Q17: Find the general equation of the circle M if the circle touches the x -axis at $A(8, 0)$ and intersects the y -axis at B and $C(0, 16)$.



- A $x^2 + y^2 + 8x + 10y + 64 = 0$
- B $x^2 + y^2 - 16x - 20y + 8 = 0$
- C $x^2 + y^2 - 16x - 20y + 64 = 0$
- D $x^2 + y^2 + 8x + 16y + 64 = 0$