Equations of Tangents of Circles GREEN

Find the equations of the tangents of the following circles at the points given.

|  |  |  |  |
| --- | --- | --- | --- |
| x² + y² = 49at the point (-5, 5) | (x – 1)² + (y + 4)² = 25at the point (4, 0) | (x - 8)² + (y – 1)² = 25at the point (4, -2) | (x + 1)² + (y – 2)² = 25at the point (3, 5) |
| (x - 2)² + (y – 6)² = 100at the point (10, 0) | (x - 4)² + (y + 2)² = 25at the point (4, 3) | x² + y² = 144at the point (-9, -8) | (x – 7)² + (y + 5)² = 169at the point (-5, 0) |

Equations of Tangents of Circles AMBER

Start by sketching each of the circles.

Find the equations of the tangents of the following circles at the points given.

|  |  |  |  |
| --- | --- | --- | --- |
| x² + y² = 49at the point (-5, 5)Gradient of radius = -5 = -1 5Gradient of tangent =  | (x – 1)² + (y + 4)² = 25at the point (4, 0)Gradient of radius = \_\_\_ Gradient of tangent = | (x - 8)² + (y – 1)² = 25at the point (4, -2) | (x + 1)² + (y – 2)² = 25at the point (3, 5) |
| (x - 2)² + (y – 6)² = 100at the point (10, 0) | (x - 4)² + (y + 2)² = 25at the point (4, 3) | x² + y² = 144at the point (-9, -8) | (x – 7)² + (y + 5)² = 169at the point (-5, 0) |

Equations of Tangents of Circles RED

Start by sketching each of the circles.

Find the equations of the tangents of the following circles at the points given.

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| --- | --- | --- | --- |
| x² + y² = 49at the point (-5, 5)Gradient of radius = -5 = -1 5Gradient of tangent = 1y – 5 = 1 (x - -5) y = x + 5 + 5 y = x + 10 | (x – 1)² + (y + 4)² = 25at the point (4, 0) Gradient of radius = 4 3 Gradient of tangent = -3 4y - \_\_\_ = \_\_\_ (x - \_\_\_) | (x - 8)² + (y – 1)² = 25at the point (4, -2) | (x + 1)² + (y – 2)² = 25at the point (3, 5) |
| (x - 2)² + (y – 6)² = 100at the point (10, 0) | (x - 4)² + (y + 2)² = 25at the point (4, 3) | x² + y² = 144at the point (-9, -8) | (x – 7)² + (y + 5)² = 169at the point (-5, 0) |