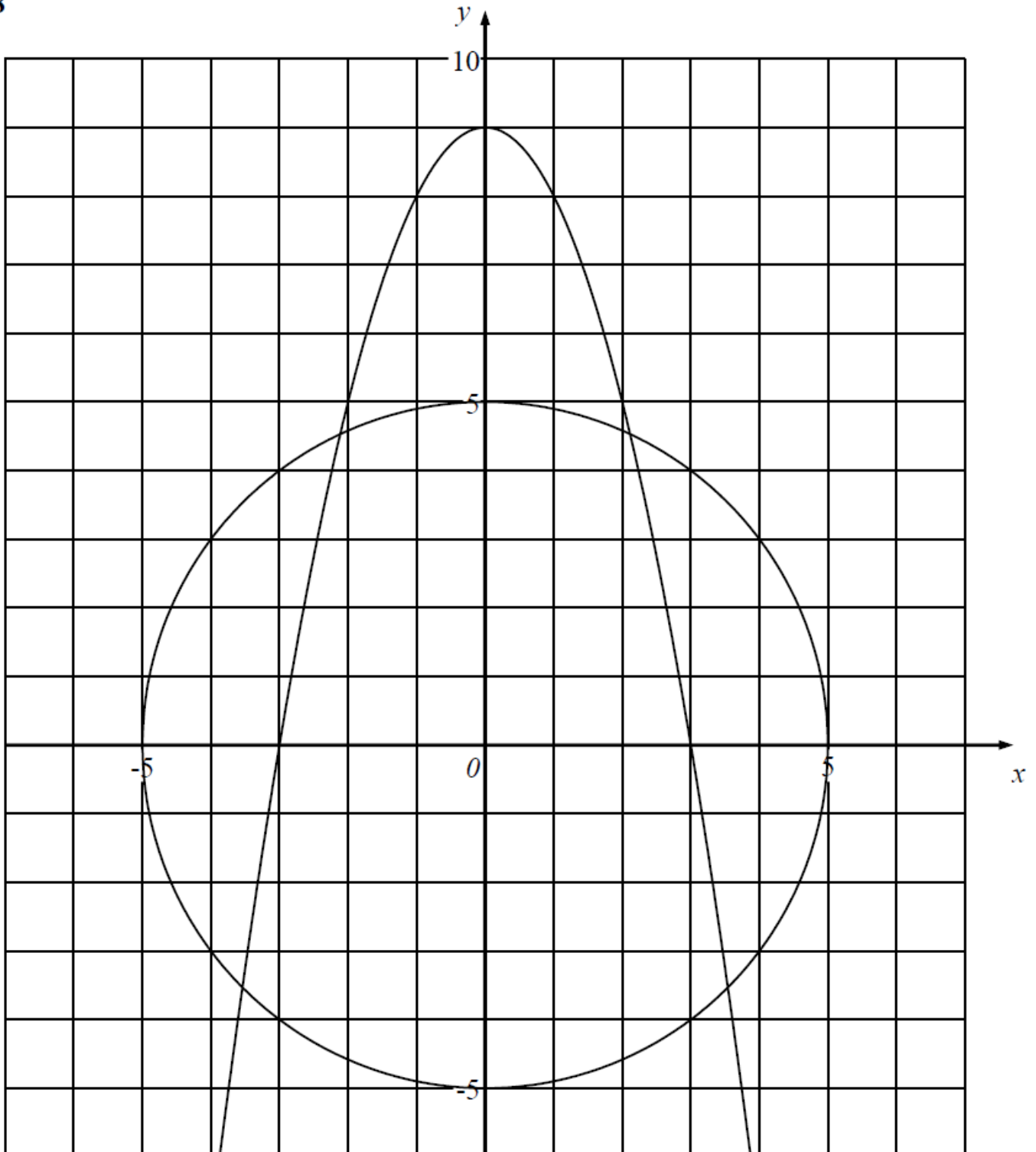


Level 3 Algebra – Graphs - Circles - Answers

June 2013 - Question 18

18	(a)		circle drawn	2	M1 for circle centre $(0, 0)$ A1 for circle centre $(0, 0)$, radius 5
	(b)		4	2	B1 for correct sketch of parabola B1 for 4 points of intersection or B1 for correct use of simultaneous equations B1 for 4 points of intersection

18

Jan 2014 - Question 18

18		circle drawn	2	M1 for circle centre (0, 0) drawn A1 for circle centre (0, 0), radius 6 drawn
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June 2015 - Question 2

2		Circle centre (0, 1) radius 5 drawn	2	M1 for using (0,1) as the centre of a circle or a circle of radius 5 drawn A1 cao
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Jan 2016 - Question 10

10		Circle centre the origin radius 4 drawn	2	M1 for drawing a circle, centre (0, 0) or circle radius 4 or $x^2 + y^2 = 16$ seen A1 for correct circle
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June 2016 - Question 1

Question	Working	Answer	Mark	Notes
1 (a)		Circle centre (0,0) radius 5 drawn	2	M1 for using (0,0) as the centre of a circle or a circle of radius 5 drawn A1 cao
(b)(i)		Tangent drawn	2	B1
(ii)		90° or $\frac{\pi}{2}$ radians		B1

Jan 2017 - Question 9

9		Outside	2	M1 for drawing an appropriate arc of a circle centre (0, 0), radius 7 A1 for (6, 6) shown on diagram and conclusion OR M1 for substitution of (6, 6) into $x^2 + y^2$ A1 for 72 and conclusion
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June 2017 - Question 4

4		Circle centre (2,0) radius 3 drawn	2	M1 for using (2, 0) as the centre of a circle or a circle of radius 3 drawn A1 cao
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Jan 2018 - Question 6

6 (a)	A circle, centre (0, 0), radius 8	Circle drawn	2	M1 for drawing a circle, centre (0, 0) or a circle, radius 8 A1 cao
(b)		$y = \pm\sqrt{(64-x^2)}$	2	M1 for $y^2 = 64 - x^2$ or $y = \sqrt{(64 - x^2)}$ A1 oe

June 2018 - Question 2

2		Circle centre the origin radius 2 drawn	2	M1 for drawing a circle, centre (0, 0) or circle radius 2 or $x^2 + y^2 = 4$ seen A1 for correct circle
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Jan 2020 - Question 6

6		Circle centre $(-2, 1)$, radius 4 cm drawn	2	M1 for using $(-2, 1)$ as the centre of a circle or a circle of radius 4 cm drawn A1
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Jan 2022 - Question 2

2		Circle centre $(0, 0)$, radius 5 drawn	2	M1 for using $(0, 0)$ as the centre of a circle or a circle of radius 5 drawn A1
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June 2022 - Question 5

5	(a)	Circle drawn	2	M1 for a circle centre $(0, 0)$ or radius 7 A1 for a circle centre $(0, 0)$ and radius 7
	(b)	Tangent drawn at $(0, 7)$	1	B1 for tangent drawn at $(0, 7)$ or ft their circle

Jan 2023 - Question 4

4		Circle drawn	2	M1 for a circle centre $(0, 0)$ or radius 4 A1 for a circle centre $(0, 0)$ and radius 4
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June 2023 - Question 5

Question	Working	Answer	Mark	Notes
5	(a)	Circle centre $(0, 0)$, radius 5 drawn	2	M1 for using $(0, 0)$ as the centre of a circle or a circle of radius 5 drawn A1 for fully correct circle.
	(b)	$y = \pm \sqrt{25 - x^2}$	3	M1 for a correct first step, eg divide through by 3 or subtract $3x^2$ from both sides A1 for $y = \sqrt{\frac{75-3x^2}{3}}$ or $y = \sqrt{25 - x^2}$ or for $y = -\sqrt{25 - x^2}$ A1 for $y = \pm \sqrt{25 - x^2}$ oe

Jan 2024 - Question 5

5	(a)	Circle drawn	2	M1 for a circle centre $(0, 0)$ or radius 4 A1 for a circle centre $(0, 0)$ and radius 4
	(b)	$x = 4$	1	B1 for $x = 4$ oe