Answers and mark guide

Q	Answer	Working	Marks
1	**−8, −1, 0, 1, 8**	Cube each value (negative cubes are negative).	3
2	**4, 2, 4/3, 1, 2/3, 1**	4 ÷ x	3
3	**−6**	Substitute carefully.	3
4	**−1/2**	2 ÷ (−4)	2
5	**15**	Substitute	2
6	**x = −3, 0, 3**	Read the intercepts.	3
7	**An S-shaped curve passing through the origin**	Cubic graph	2
8	**Two separate curves (a hyperbola), one in the top-right and one in the bottom-left**	Reciprocal graph	3
9	**x = 0 and y = 0**	The curve approaches but never touches them.	3
10	**No: x = 0 would mean dividing by zero**	The y-axis is an asymptote.	2
11	**2.3**	Read where y = 3 meets the curve.	4
12	**0.8**	Read across from y = 2.5.	3
13	**(−1, 2) and (1, −2)**	Turning points occur where the gradient is zero.	4
14	**Yes: y = x and y = −x**	The hyperbola is symmetrical about both diagonals.	3
15	**(0, 0)**	x = 0 gives y = 0	2
16	**3.7**	Take the cube root.	4
17	**x = 0, ±3**	Factorise: $x(x^2 - a) = 0$	4
18	**y = 2/x; width 1/2 cm**	Area = x × y	4
19	**2.83**	$x^2 = 8$	5
20	**$y = x^3 + 2$**	Add 2 to y.	3

My score: _____ / 62 Questions 1–15 = 42 marks (Foundation focus)