

Types of Numbers Mark Scheme

1(a)	$\sqrt{81} = 9, \sqrt{144} = 12, \text{ and } 0$	[1]
1(b)	$\pi \text{ and } \sqrt{1000}$	[1] Do not accept $\sqrt{-2}$
2(a)	$m = 36$	[1] By trial and error or otherwise
2(b)	$\sqrt{2} \text{ and } \sqrt{3}$	[1] Accept any sensible answer
3(a)	$2\sqrt{4} = \sqrt{4 \times 4} = \sqrt{16} = 4$	[1] Selecting $2\sqrt{4}$
3(b)	$\sqrt{7} \times \sqrt{7} = 7$	[1] Selecting $\sqrt{7}$ and $\sqrt{7}$
4(a)	e.g. $x = \pm 1, y = 3$ or $x = \pm 2, y = 2$	[1] Accept any reasonable answer
4(b)	eg. $x = 1, y = -\frac{1}{3}$ or $x = 0, y = \frac{5}{3}$	[1] Accept any reasonable answer
5(a)	$13.6 - 4.5 - 3 = x$	[1] Correct calculation using perimeter
	$x = 6.1 \text{ cm}$	[1] Correct length
5(b)	A rational number is a number that can be written as a fraction of two integers	[1] Reasoning
	Hence, x is rational.	[1] Correct conclusion
6	A: Never True	[1] Rational + Irrational = Irrational
	B: Always True	[1] e.g. $1 + 2 = 3$
	C: Sometimes True	[1] e.g. $1.5 \times 2 = 3$
	D: Sometimes True	[1] e.g. $\sqrt{2} \times 0 = 0$
	E: Sometimes True	[1] eg. $\sqrt{2} + (1 - \sqrt{2}) = 1$

END