

1.5.3 Solutions (1.4 Homework)

GCSE Mathematics Differentiation I

Answer 1

(i)	125	(ii)	256	(iii)	− 1
(iv)	$\frac{1}{27}$	(v)	$\frac{2}{5}$	(vi)	0.25
(vii)	1	(viii)	1	(ix)	12
(x)	5	(xi)	1	(xii)	$\frac{1}{3}$
(xiii)	121	(xiv)	$\frac{64}{49}$	(xv)	1
(xvi)	8000	(xvii)	1	(xviii)	64
(xix)	9	(xx)	$\frac{1}{21}$	(xxi)	$\frac{9}{64}$
(xxii)	$\frac{9}{7}$	(xxiii)	10	(xxiv)	− 1
(xxv)	8	(xxvi)	25		

[26 marks]

Answer 2

$$y = x^2 + 3$$

(1, 4) (4, 19) (100, 10003) (− 1, 4)

[4 marks]

Answer 3

$$y = x^{0.5} + x$$

(0, 0) (1, 2) (9, 12) (100, 110)

[4 marks]

Answer 4

$$y = 6x^{-1}$$

(1, 6) (2, 3) (3, 2) (6, 1)

[4 marks]

Answer 5

$$y = 64x^{-2}$$

(1, 64) (2, 16) (4, 4) (8, 1)

[4 marks]

Answer 6

$$y = 12x^{\frac{1}{2}}$$

(1, 12) (4, 24) (36, 72) $\left(\frac{1}{4}, 6 \right)$

[4 marks]

This document is a part of a **Mathematics Community Outreach Project** initiated by Shrewsbury School

It may be freely duplicated and distributed, unaltered, for non-profit educational use

In October 2020, Shrewsbury School was voted “**Independent School of the Year 2020**”

© 2025 Number Wonder

Teachers may obtain detailed worked solutions to the exercises by email from MHHShrewsbury@Gmail.com