

Workbook

P. 48

#2

- a) No b) Yes c) Yes
 d) No e) No f) Yes

P. 50

#7

- a) $dom f = [1,4]; ran f = [1,3]$ b) $dom f = \mathbb{R}; ran f = \mathbb{R}$
 c) $dom f = \mathbb{R}; ran f = \mathbb{R}_+$ d) $dom f = [1, +\infty[; ran f = [-1, +\infty[$
 e) $dom f = \mathbb{R}; ran f = [-1, +\infty[$ f) $dom f = [1,6]; ran f = [-1,3]$
 g) $dom f = [-1, +\infty[; ran f = [-1,2]$ h) $dom f = [-1,4]; ran f = [-3,3]$
 i) $dom f = \mathbb{R}; ran f =] - \infty, 3]$

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#9

- a) zero: 3 initial value: 2 b) zero: - 2 initial value: 3
 c) zeros: - 1 and 1 initial value: -1 d) zeros: - 1 and 3 initial value: 2

#11

- a) zero is 3, it represents the number of months since opening for the profit to be zero.
 b) initial value is -1500, it represents the company's profit at its opening.

#12

- a) zeros: 1s and 4s, they represent the time at which the diver was at the surface of the water.
 b) Initial value is 4m, it represents the height from which the diver jumped.

P. 54

#14

- a) $dom f = [-1, +\infty[$ b) $ran f = [-3, +\infty[$
 c) zero: 1 d) initial value: -1
 e) 1. $f(x) \geq 0$ over $[-1, +\infty[$
 2. $f(x) < 0$ over $[-1,1[$

#14

- a) $dom f = \mathbb{R}$ b) $ran f = [-2, +\infty[$
 c) zero: 1 and 3 d) initial value: 2
 e) 1. $f(x) > 0$ over $] - \infty, 1[\cup]3, +\infty[$
 2. $f(x) \leq 0$ over $[1,3]$