

TT 15. Foundations and Pre-calculus Mathematics 10 (Pearson), questions 4, 7, 9, 19, and 21.b) on pages 294 to 297 **Possible Solutions**

4. a) domain: $\{-2, -1, 0, 1, 2\}$; range: $\{-4, -2, 0, 2, 4\}$

4. b) domain: $\{-3, -1, 0, 2, 3\}$; range: $\{-2, 0, 1, 2, 3\}$

4. c) domain: $\{-3, -2, -1, 0, 1, 2, 3\}$; range: $\{2\}$

7. a) iv

7. b) i

7. c) ii

7. d) iii

9. a) domain: $\{x | x \in \mathbb{R}\}$ (The graph continues to the left and to the right, so the domain is the set of all real numbers.)

or

$(-\infty, +\infty)$

range: $\{y | y \geq 1, y \in \mathbb{R}\}$ (The graph decreases down until it reaches a value of 1 and then increases, so the range is all real numbers greater than or equal to 1.)

or

$[1, \infty)$

9. b) domain: $\{x | -3 \leq x \leq 3, x \in \mathbb{R}\}$ (The domain is all real numbers between and including -3 and 3.)

or

$[-3, 3]$

range: $\{y | 0 \leq y \leq 3, y \in \mathbb{R}\}$ (The range is all real numbers between and including 0 and 3.)

or

$[0, 3]$

9. c) domain: $\{x | -3 \leq x \leq 3, x \in \mathbb{R}\}$ (The domain is all real numbers between and including -3 and 3.)

or

$[-3, 3]$

range: $\{y | -3 \leq y \leq 0, y \in \mathbb{R}\}$ (The range is all real numbers between and including -3 and 0.)

or

$[-3, 0]$

9. d) domain: $\{x | -1 \leq x \leq 2, x \in \mathbb{R}\}$ (The domain is all real numbers between and including -1 and 2.)

or

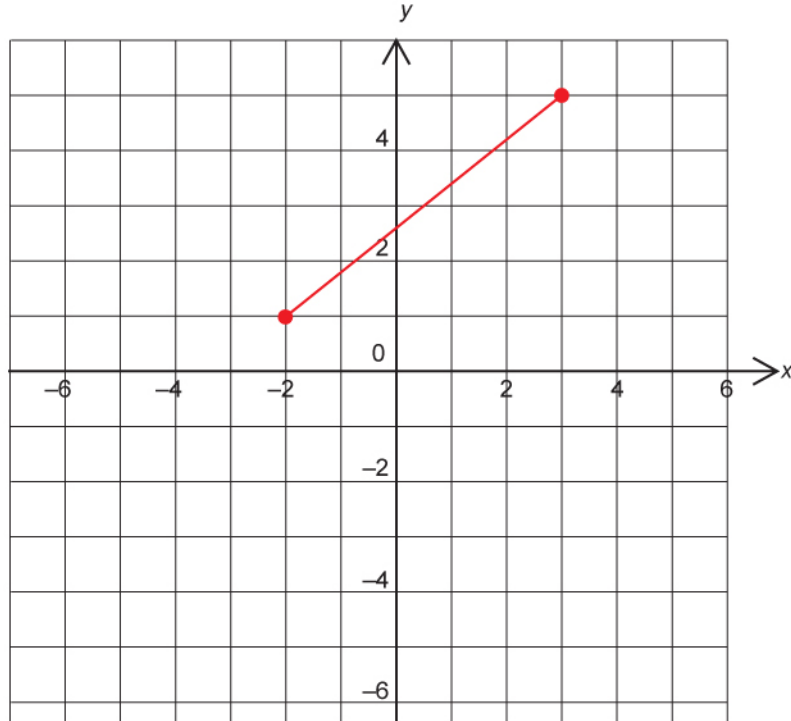
$[-1, 2]$

range: $\{y \mid 0 \leq y \leq 3, y \in \mathbb{R}\}$ (The range is all real numbers between and including 0 and 3.)

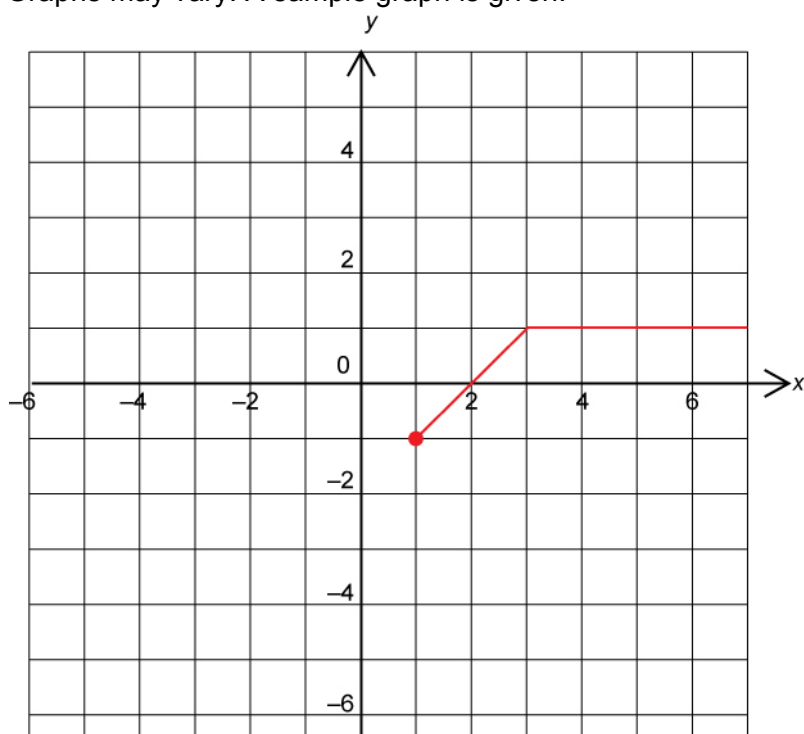
or

$[0, 3]$

19. a) Graphs may vary. A sample graph is given.



19. b) Graphs may vary. A sample graph is given.



21. b) domain: $\{x \mid 0 < x \leq 500; , x \in \mathbb{R}\}$ range: $\{0.54, 0.98, 1.18, 1.96, 2.75\}$