Module 6 Lesson 1

TT15 Possible Solutions

TT 17.a. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 6.a), 6.c), 7.b), 7.c), 14.a), 14.d), 15.b), and 19 on pages 271 and 272

6. a) $C(n) = 20n + 8$

c) $t(d) = 5d$

7. b) $y = -6x + 4$

c) $C = 5n$

14. a)
$$f(x) = -5x + 11$$
$$f(1) = -5(1) + 11$$
$$f(1) = -5 + 11$$
$$f(1) = 6$$

d)
f(x) = -5x +11
f(1.2) = -4(1.2) + 11
f(1.2) = -6 + 11
f(1.2) = 5

15. b) i)
$$g(x) = -5x + 1$$
$$41 = -5x + 1$$
$$-5x + 1 = 41$$
$$-5x + 1 - 1 = 41 - 1$$
$$-5x = 40$$
$$\frac{-5x}{-5} = \frac{40}{-5}$$
$$x = -8$$

ii)
$$g(x) = -5x + 1$$
$$-16 = -5x + 1$$
$$-5x + 1 = -16$$
$$-5x + 1 - 1 = -16 - 1$$
$$-5x = -17$$
$$\frac{-5x}{-5} = \frac{-17}{-5}$$
$$x = \frac{17}{5} \text{ or } 3.4$$

19. a) i)
$$C(f) = \frac{5}{9}(f - 32)$$
$$C(50) = \frac{5}{9}(50 - 32)$$
$$C(50) = \frac{5}{9}(18)$$
$$C(50) = 10°C$$

ii)
$$C(f) = \frac{5}{9})f - 32)$$
$$C(-13) = \frac{5}{9}(-13 - 32)$$
$$C(-13) = \frac{5}{9}(-45)$$
$$C(-13) = -25°C$$

b) i)

$$C(f) = \frac{5}{9}(f - 32)$$
$$20 = \frac{5}{9}(f - 32)$$
$$\frac{5}{9}(f - 32) = 20$$
$$\frac{9}{5}\left[\frac{5}{9}(f - 32)\right] = \frac{9}{5}(20)$$
$$f - 32 = 36$$
$$f - 32 + 32 = 36 + 32$$
$$f = 68°\text{F}$$

ii)

$$C(f) = \frac{5}{9}(f - 32)$$
$$-35 = \frac{5}{9}(f - 32)$$
$$\frac{5}{9}(f - 32) = -35$$
$$\frac{9}{5}\left[\frac{5}{9}(f - 32)\right] = \frac{9}{5}(-35)$$
$$f - 32 = -63$$
$$f - 32 + 32 = -63 + 32$$
$$f = -31°\text{F}$$

c) i) $C(0) = 32$

ii) $C(100) = 212$

iii) $C(180) = 356$

TT 17. b. *Foundations and Pre-calculus Mathematics 10* (Pearson), question 16 on page 296

16. a) You may choose to determine the range value algebraically or graphically.

Algebraically

$f(x) = 2x - 1$

$f(0) = 2(0) - 1$

$f(0) = -1$

Graphically

On the graph, determine the *y*-coordinate of the point with *x*-coordinate 0. The answer is –1.

b) You may choose to determine the domain value algebraically or graphically.

Algebraically

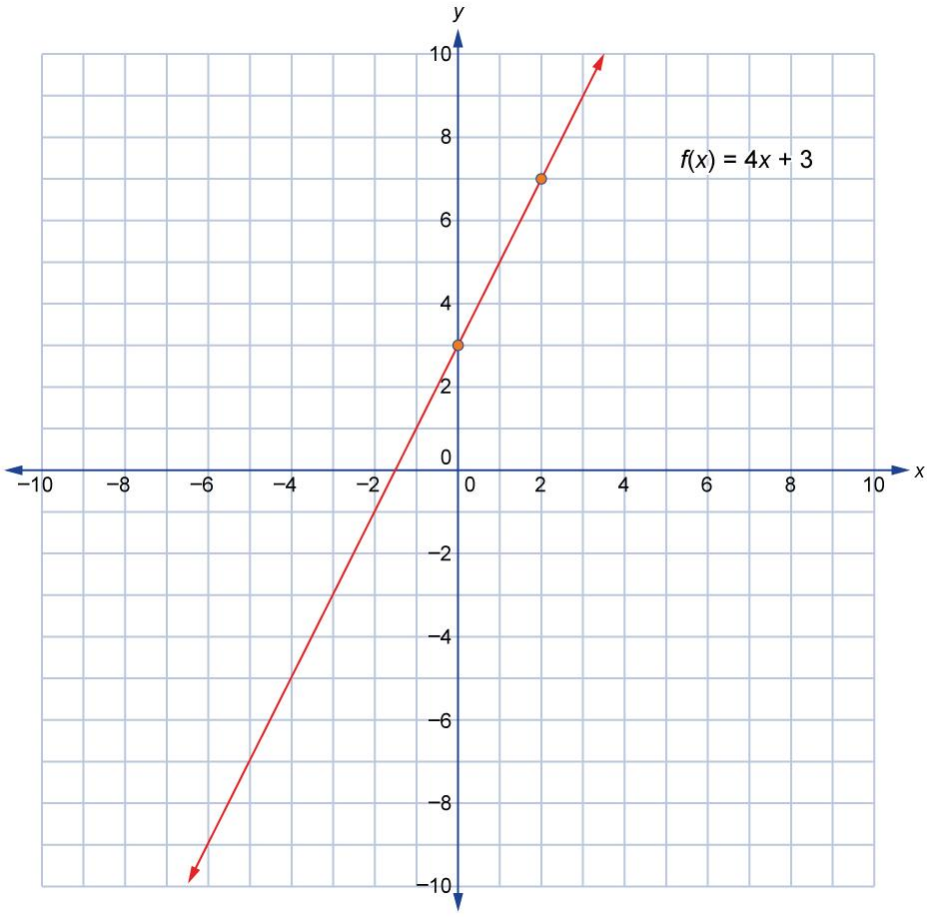
$$f(x) = 2x - 1$$
$$5 = 2x - 1$$
$$5 + 1 = 2x - 1 + 1$$
$$6 = 2x$$
$$\frac{6}{2} = \frac{2x}{2}$$
$$x = 3$$

Graphically

On the graph, determine the *x*-coordinate of the point with *y*-coordinate 5. The answer is 3.

TT 17.c. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 6.a) and 15.a) on pages 319 to 322

6. a) This shows the graph for the linear function $f(x) = 4x + 3$.



15. a) Plot the *y*-intercept (0, 5). Since it is less precise to apply a slope of $\frac{-2.5}{1}$, you can apply an equivalent slope of $\frac{-5}{2}$ to the *y*-intercept.