

Solutions Tests

BLM 1–9 Chapter 1 Test

1. B 2. C 3. B 4. D 5. B

6. There are 33 lockers.

7. Brittany travelled 1752 m.

8. 20 358

9. a) $d = 6$ b) $t_1 = 4$ c) $t_{100} = 598$

10. a) $r = 9$ or -9 b) $t_n = 5(9)^{n-1}$ or $t_n = 5(-9)^{n-1}$

11. a) $-3, -12, -48$

b) The sequence is geometric. $t_n = -3(4)^{n-1}$

12. a) Example, for the series

$2 + 10 + 50 + \dots$, $S_{10} = 4\,882\,812$.

b) Answers will vary. Students need to change the sign of the first term, while leaving the common ratio unchanged. In the example above, the series becomes $-2 - 10 - 50 - \dots$, $S_{10} = -4\,882\,812$.

c) Answers will vary. Correct answers must have positive first term and negative common ratio.

For example, $2 - 10 + 50 - \dots$

13. a) 6979, 7537, 8140 b) $t_n = 6462(1.08)^{n-1}$

c) 27 888

d) Answers will vary. For example, we assume that population continues to grow at the same rate.

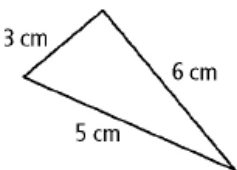
14. Answers will vary, however will all be in the form k, k, k, \dots , where k is a real number.

a) Note that $d = 0$, so $t_n = k$.

b) Note that $r = 1$, so $t_n = k$.

c) There are infinitely many such sequences, but all sequences will have the same form.

BLM 2-9 Chapter 2 Test

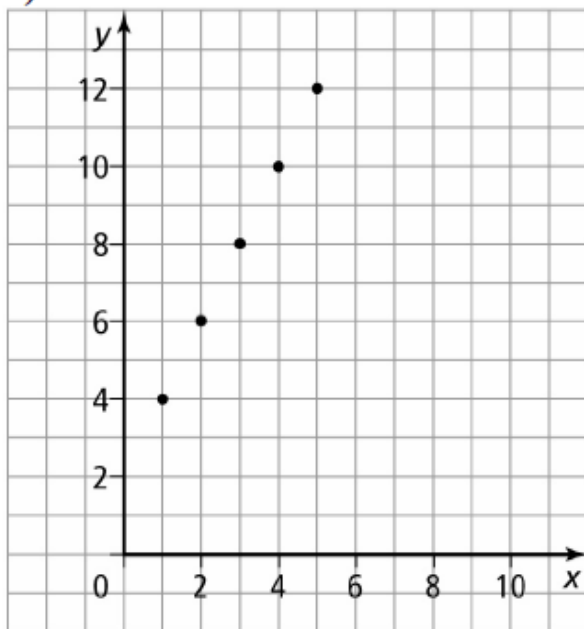
1. B 2. B 3. C 4. D 5. A 6. 9.5 yd 7. 21.9 cm
 8. 14 cm 9. a) $-\sqrt{3}$ b) $\frac{-\sqrt{3}}{2}$ c) $\frac{\sqrt{2}}{2}$
 10. a) 20° b) $20^\circ, 200^\circ, 340^\circ$
 11. a)  b) $29.9^\circ, 56.3^\circ, 93.8^\circ$

12. 12.5 ft and 6.4 ft

BLM U1-4 Unit 1 Test

1. A 2. B 3. D 4. D 5. B 6. 168 7. 315
 8. 4.3 9. IV 10. 1 11. 0
 12. a) $t_n = 4 + (n - 1)(2)$ or $t_n = 2n + 2$

b)



c) $f(n) = 2n + 2$. The slope of the graph of the function is 2. The common difference of the arithmetic sequence is 2.

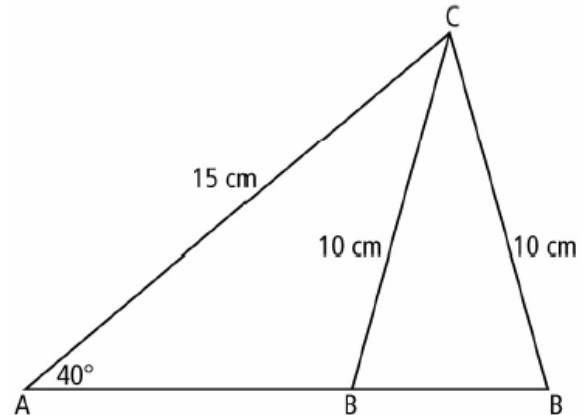
d) The domain of the arithmetic sequence is $n \in \mathbb{N}$. Therefore, the graph is discrete. The domain of the function is $n \in \mathbb{R}$. Therefore, the graph would be continuous.

13. a) 17 b) $\sin \theta = -\frac{8}{17}$, $\cos \theta = -\frac{15}{17}$, $\tan \theta = \frac{8}{15}$

c) $\theta = 208.1^\circ$

14. a) $a < b$ is true. Compare the values of a and $b \sin A$. $a > b \sin A$ because $10 > 9.6418\dots$. Therefore, two triangles exist.

b)



c) $\angle B = 74.6^\circ$ or 105.4°

BLM 3–7 Chapter 3 Test

1. B 2. A 3. C 4. A 5. D

6. a) x b) y c) y

7. a) r and s b) t

8. a) $f(x) = \frac{1}{3}(x+4)^2 + 2$

b) $f(x) = -\frac{x^2}{3} + 5$

9. a) $y = (x-2)^2 + 8$; vertex (2, 8)

b) $y = -\frac{1}{4}(x+8)^2 - 2$; vertex(-8, -2)

10. vertex: (6, -21); axis of symmetry: $x = 6$;

direction of opening: upward; domain: $x \in \mathbb{R}$;

range: $y \geq -21$; x -intercepts: $(6 \pm \sqrt{42}, 0)$;

y -intercept: (0, -3)

11. a) $R = -50x^2 + 400x + 12\,000$ b) \$80

c) \$12 800 d) 40 seats

BLM 4–9 Chapter 4 Test

1. A 2. B 3. D 4. B 5. A

6. $\frac{5\sqrt{5}}{2}$ or 5.59 s

7. a) In line 2, -4 should be in brackets. $\frac{2 \pm \sqrt{10}}{2}$.

b) In step 3, each term should have been divided by 15. $\frac{-3 \pm \sqrt{39}}{15}$.

8. a) $x = 2$ or 8; Example: Factoring, because the equation is easily factored to $(x-2)(x-8)$.

b) $x = -7$ or $x = \frac{2}{3}$; Example: Quadratic formula, because the equation is not readily factored.

c) $x = 3 \pm \sqrt{2}$; Example: Completing the square, because it is easy to find the perfect square.

d) $x = 1$ or 5; Example: Determining square roots, because it is easy to find the roots for $(x-3)^2 = 4$

9. $x^2 + 5x - 10 = 0$; $\frac{-5 \pm \sqrt{65}}{2}$

10. $|k| > \frac{5}{2}$

11. 11.3 m by 9.3 m

12. $\frac{2}{3}$ or $\frac{3}{2}$

13. 2.57 s

BLM 5–7 Chapter 5 Test

1. B 2. D 3. A 4. C 5. B

6. $6\sqrt{2}$, $5\sqrt{3}$, $2\sqrt{19}$, $4\sqrt{5}$, 9

7. False. $\sqrt{16} + \sqrt{9} = 7$

8. $7\sqrt{6}$ units

9. $5\sqrt{5}$

10. $r = 7, r \geq -\frac{1}{3}$

11. $-6\sqrt{5} - 13$

12. a) No. Valerie's error is in taking the square root of each term of the radicand. The equation

$v_0 = \sqrt{v^2 - 20h}$ cannot be further simplified.

b) 60 m

13. a) $x = \frac{3}{2}$ b) $\frac{3}{2}$ is not a root of the equation.

14. a) $y = 3, y = 7$ b) $y \geq \frac{5}{3}$