Application and Enrichment Solutions

Application and Enrichment 1G

1. sum
2. factors
3. product
4. quotient
5. G, B
6. F, optional: C, E
7. A, optional: E
8. H, optional: E
9. E, optional: A
10. B, optional: E
11. C, optional: E
12. D, optional: E
13. B, optional: A, E
14. 3X
15. 3G
16. 4Y
17. 11A

Application and Enrichment 2G

1. Each expression has a value of 9.
2. always true
3. always true
4. sometimes false
5. always true
6. sometimes false
7. done
8. $20 \times 6 = 120$
   $4 \times 30 = 120$
9. $6 + 7 = 13$
   $9 + 4 = 13$
10. $2 \div 2 = 1$
    $12 \div 3 = 4$
11. $5 - 3 = 2$
    $10 - 2 = 8$

Application and Enrichment 3G

1. 4
2. 5
3. 8
4. 9
5. 5
6. 1, 2, 3, 4, 6, 8, 12, 24
7. 1, 3, 9
8. 1, 3, 5, 9, 15, 45
9. 1, 2, 4, 8, 16
10. 6(1) + 6(2)
11. 5(5) + 5(6)
12. 3(3) + 3(7)
13. 6(1 + 2) = 6(3) = 18
    6 + 12 = 18
14. 5(5 + 6) = 5(11) = 55
    25 + 30 = 55
15. 3(3 + 7) = 3(10) = 30
    9 + 21 = 30

Application and Enrichment 4G

1. 3(7) = 21
   18 + 3 = 21 The answers agree.
2. 4(2 + 5) = 4(7) = 28
   4(2) + 4(5) = 8 + 20 = 28
3. 2(10 + 6) = 2(16) = 32
   2(10) + 2(6) = 20 + 12 = 32
4. 6(2 + 3) = 6(5) = 30
   6(2) + 6(3) = 12 + 18 = 30
5. 7(8 + 4) = 7(12) = 84
   7(8) + 7(4) = 56 + 28 = 84
6. 4(2) + 4(B) = 8 + 4B
7. 8(A) + 8(4) = 8A + 32
8. 2(X) + 2(Z) = 2X + 2Z
9. 7(A) + 7(2Y) = 7A + 14Y
10. 2(3) + 2(5B) = 2(3 + 5B)
11. 5(3) + 5(7X) = 5(3 + 7X)
12. 9(1) + 9(8Y) = 9(1 + 8Y)

Application and Enrichment 5G

1. Answers will vary. Both sides of final equation should match. Example:
   1 + 1 = 2(1); 2 = 2
   5 + 5 = 2(5); 10 = 10
2. Answers will vary. Both sides of final equation should match.
3. Answers will vary. Both sides of final equation should match.

4. $3(2) + 4 = 4 + 3(2)$
   $6 + 4 = 4 + 6$
   $10 = 10$; true
5. $5(8 - 6) = 5(8) - 30$
   $5(2) = 40 - 30$
   $10 = 10$; true
6. $4(3) = 2(3) + 2$
   $12 = 6 + 2$
   $12 \neq 8$; false
7. $5(2) \div 5 = 5 \div 5(2)$
   $10 \div 5 = 5 \div 10$
   $2 \neq 1/2$; false
8. done
9. 3, 6, 9, 12, 15 . . .
   4, 8, 12, 16 . . .
   The LCM of 3 and 4 is 12.
10. 6, 12, 18, 24, 30 . . .
    10, 20, 30, 40 . . .
    The LCM of 6 and 10 is 30.
11. 4, 8, 12, 16 . . .
    12, 24, 36, 48 . . .
    The LCM of 4 and 12 is 12.
12. 9, 18, 27, 36, 45 . . .
    12, 24, 36, 48 . . .
    The LCM of 9 and 12 is 36.

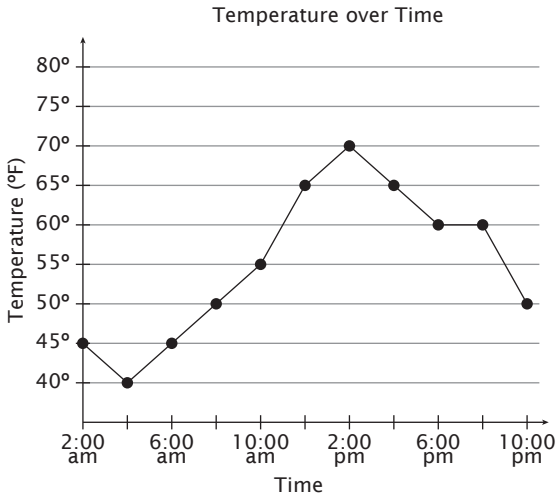
Application and Enrichment 6G

1. 10 years
2. 24 years
3. 14 years
4. 10, 15, 24 years

5–8. On graph, 1 has 1 dot, 2 has 2, 3 has 3, 7 has 1 dot.

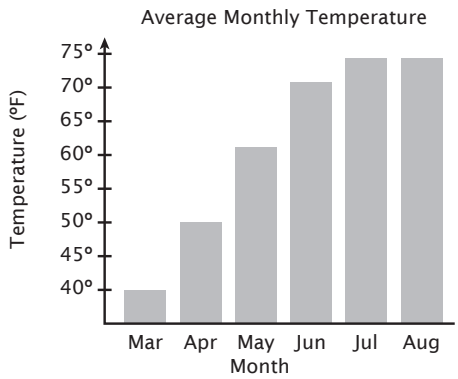
5. 3
6. 1, 7
7. $1 + (2 \times 2) + (3 \times 3) + 7 =$
   $1 + 4 + 9 + 7 = 21$ pets
8. $21 \div 7 = 3$ pets average

Application and Enrichment 7G

1. 3 kg
2. $5 - 3 = 2$ kg
3. 8 kg
4. birth to three months
5. 

6. 40° at 4:00 AM
7. 70° at 2:00 PM

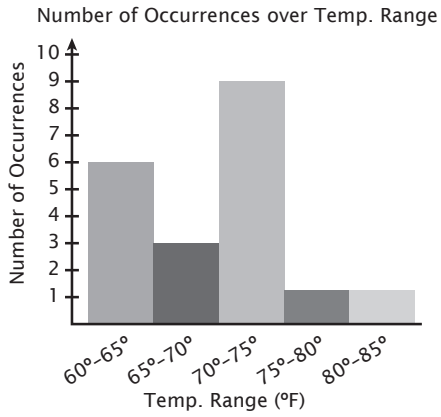
Application and Enrichment 8G

1. Freddie, 4 flies
2. Billy, 14 flies
3. $4 + 8 + 6 + 14 = 32$ flies
4. $32 \div 4 = 8$ flies
5. no
6. 

7. March
8. July, August
9. $74° - 40° = 34°$

Application and Enrichment 9G

1. 31–40 years

2. 61–70 years
3. Sample answer: Yes; many of the employees are around the age at which people are most likely to have young families (mid 20s to late 30s).
4. Sample answer: No; the fact that employees are the right age to have young families does not necessarily mean they are married or have children.
5. 60°–65°: 6 times
   65°–70°: 3 times
   70°–75°: 9 times
   75°–80°: 1 time
   80°–85°: 1 time
6. 

Application and Enrichment 10G

1. $3.29
2. $16.12
3. $5.70
4. $0.35
5. 25.4 inches
6. 6.92 m
7. 125 mi
8. 0.40 cm
9. 1,568.21 miles
10. 1,600 miles

Application and Enrichment 11G

1.

trunks	legs
1	4
2	8
3	12
4	16

2. count by one/add one
3. skip count by 4/multiply by 4
4. 4

dishes	minutes
3	1
6	2
9	3
12	4

5. 8 minutes; divide by 3 or multiply by 1/3.
6. 8 dishes ÷ 4 min = 2 dishes/min

Application and Enrichment 12G

1. 1/10 × 300 = 30 votes
2. 16 red for every 20 yellow

red	4	8	12	16
yellow	5	10	15	20

3. 8/4 = 8 ÷ 4 = 2 minutes per pan
4. 4 × 15 = 60
   2 × 4 = 8 incorrect

Application and Enrichment 13G

1.

gallons of green	2	4	6	8	10
total gallons	3	6	9	12	15

2. 8 gallons
3. 12 – 8 = 4 gallons

4.

cranberry	3	6	9	12	15
mixture	5	10	15	20	25

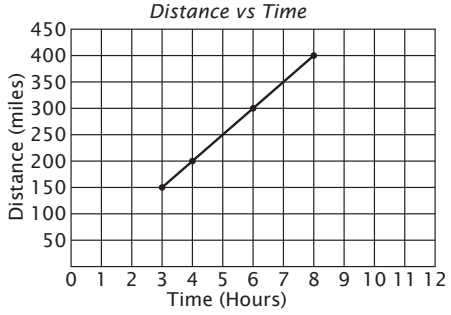
5. 12 cups
6. 20 – 12 = 8 cups

Application and Enrichment 14G

1.

Miles	Hours	MPH
200	4	50
300	6	50
150	3	50
400	8	50

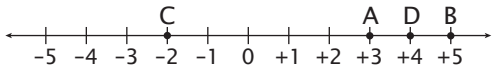
2.



3. done
4. 80 mi/2 hr = 40 mi/hr
40 mi/hr × 3 hr = 120 mi
5. 15 mi/5 hr = 3 mi/hr
3 mi/hr × 3 hr = 9 mi
6. done
7. 1 oz/28 g = ? /56 g
28 g × 2 = 56 g; 1 oz × 2 = 2 oz
8. 1 gal/4 qt = ? gal/32 qt
4 × 8 = 32; 1 gal × 8 = 8 gal
9. (6 ft/1) × (1 yd/3 ft) = 6/3 yd = 2 yd
10. (5 kg/1) × (1000 g/1 kg) = 5,000 g
11. (12 qt/1) × (1 gal/4 qt) = 3 gal
12. (84 g/1) × (1 oz/28 g) = 3 oz
13. (9 km/1) × (1,000 m/1 km) = 9,000 m
14. (55 kg/1) × (2.2 lb/1 kg) = 121 lb

Application and Enrichment 15G

1.

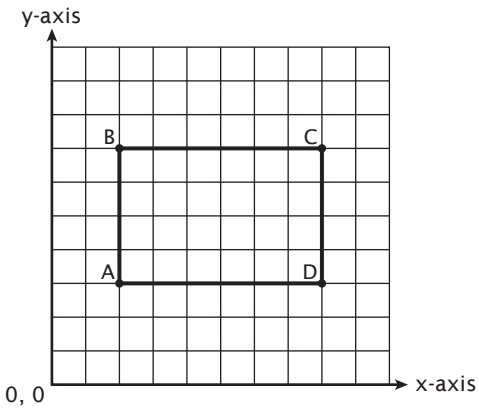


2. <
3. <
4. >
5. <
6. 20
7. 10
8. 15

Application and Enrichment 16G

1. $55
2. –32 > –120; Justin is camping at the higher location.
3. Jerry; the absolute value (distance from zero) of –120 is greater than the absolute value of –32.
4. 31° > –13°
5. |31| > |–13| or |-13| < |31|
6.

7.

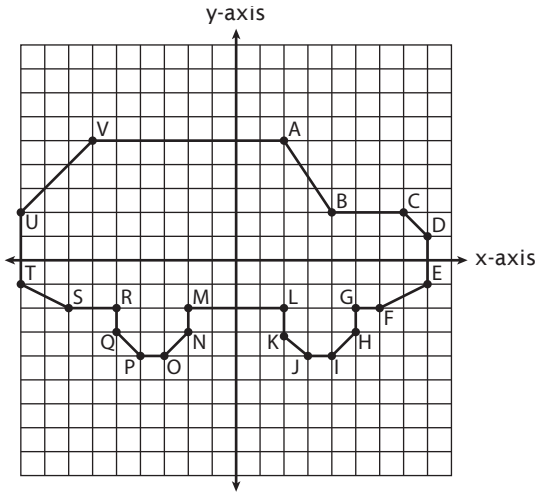


20 units

8. 4 units
9. 6 units
10. 6 + 6 + 4 + 4 = 20 units
    Adding the lengths of the sides yields the same answer as counting.

Application and Enrichment 17G

1.

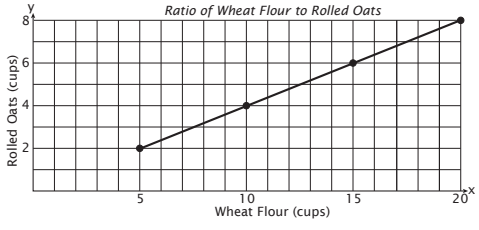


Application and Enrichment 18G

1.

Wheat Flour	Rolled Oats
5	2
10	4
15	6
20	8

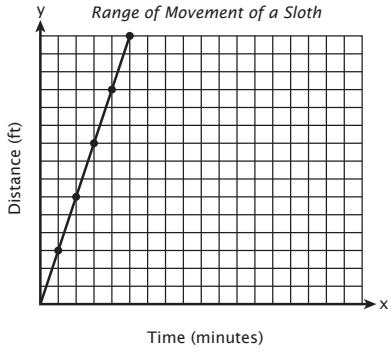
2. 5 cups
3. 2 cups
4.



5.

Feet	Minutes
3	1
6	2
9	3
12	4
15	5

6. 2
7. 3
8. 4
9. skip counting by 3
10.



Application and Enrichment 19G

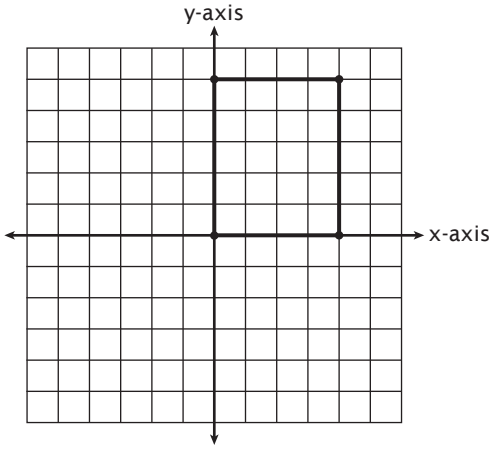
1. 0.8A = 160
   A = 160 ÷ 0.8; A = 200 yd^2
2. 0.7D = 49
   D = 49 ÷ 0.7; D = 70 in
3. 0.25(M) = $15
   M = $15 ÷ 0.25 = $60
4. 0.75P = $261
   P = $261 ÷ 0.75 = $348
5. 0.3T = 3
   T = 3 ÷ 0.3 = 10 hours
6. false, false, true
7. true, true, false
8. 0.5(0.4) = 0.2; <
9. 0.5(0.4) = 2; <
10. 0.5(40) = 20; >

Application and Enrichment 20G

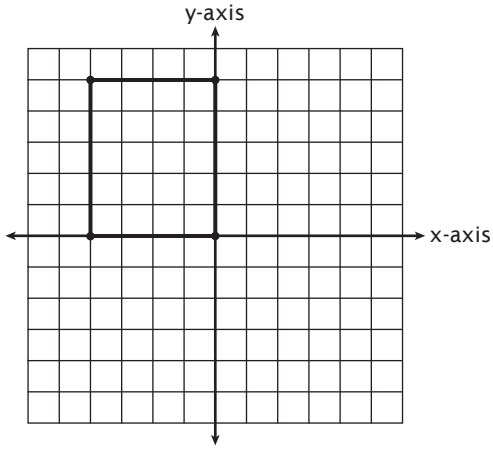
1. $2\pi r \approx 2(3.14)(2) \approx 12.56$ in
   $\pi(2^2) \approx 12.56$ in^2
2. $2\pi r \approx 2(3.14)(4) \approx 25.12$ in
   $\pi(4^2) \approx 3.14(16) \approx 50.24$ in
3. 2
4. 4
5. $2\pi r \approx 2(3.14)(3) \approx 18.84$ in
   $\pi(3^2) \approx 3.14(9) \approx 28.26$ in^2
6. $2\pi r \approx 2(3.14)(6) \approx 37.68$ in
   $\pi(6^2) \approx 3.14(36) \approx 113.04$ in^2
7. 2
8. 4

Application and Enrichment 21G

1. (4, 0)
2. (4, 5)
3. (0, 5)
4. (0, 0)
5.



6. 4
7. 5
8. $4 \times 5 = 20$
9.



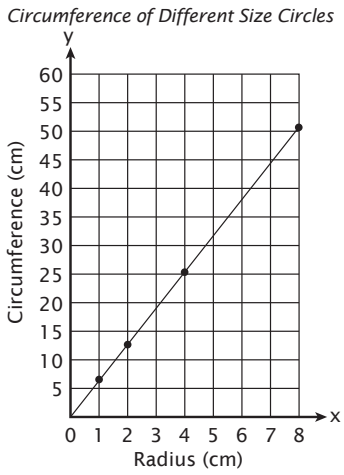
10. –4
11. 4 blocks
12. 5
13. 5 blocks
14. $4 \times 5 = 20$ square blocks

Application and Enrichment 22G

1. $5C = 20$
2. C = 4 cars
3. $\$3.50(D) = M$
   $\$3.50(5) = \$17.50$
4. $\$3.50(12) = \$42$
5. $\$3.50(D) = \$35$
   D = 10 days and sandwiches
6.

Radius	1 cm	2 cm	4 cm	8 cm
C = 2(3.14)r	6.28 cm	12.56 cm	25.12 cm	50.24 cm

7.



Application and Enrichment 23G

1. 3 ft × 4 ft × 5 ft = 60 ft^3

2. bottom = 15 ft^2
top = 15 ft^2
front = 20 ft^2
back = 20 ft^2
side 1 = 12 ft^2
side 2 = 12 ft^2

3. surface area = 94 ft^2

4. 96 ft^2 + 120 ft^2 + 96 ft^2 + 120 ft^2 + 80 ft^2 + 80 ft^2 = 592 ft^2

5. 600 ft^2 × (1 can/100 ft^2) = 6 cans

6. triangles:
(1/2)(6 in × 4 in) = 12 in^2
square: 6 in × 6 in = 36 in^2
(12 in^2 × 4) + 36 in^2 = 84 in^2

Application and Enrichment 24G

1. 6

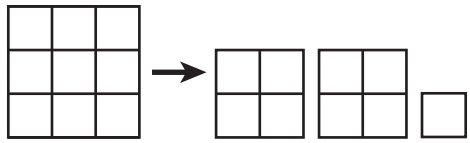
2. 12

3. yes

4. 6 + 6 + 6 + 6 + 4 + 4 = 32 squares

5. 1.5 in × 1.5 in = 2.25 in^2

6.

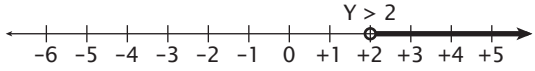


7. (1.5 in)(1.5 in)(1 in) = 2.25 in^3
Since one unit block is about half an inch on a side, it takes about eight to make a cubic inch. You should have used 18 blocks to build the shape, since 18 ÷ 8 = 2.25.

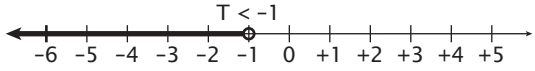
8. (1.5 in)(1.5 in)(1.5 in) = 3.375 in^3
27 blocks = 3 groups of eight blocks (3 in^3) with 3 left over (0.375 in^3)

9. T < 100° C

10.



11.



Application and Enrichment 25G

1. lowest = 2
highest = 10
spread = 10 – 2 = 8

2. 2, 3, 4, 5, 5, 6, 6, 7, 7, 7, 8, 8, 8, 8, 9, 9, 10
median = 7

3. mode = 8

4. asymmetrical

5.

6. 10 – 4 = 6

7. 4, 4, 4, 5, 6, 6, 6, 6, 7, 8, 8, 9, 9, 9, 9, 10, 10
median = 7

8. 2 peaks
9. 120 ÷ 17 = 7.1

Application and Enrichment 26G

1. 4 + 2 + 4 + 6 + 2 + 1 = 19 people
2. 2 + 4 + 2 + 4 + 1 + 1 = 14 people
3. 19 + 14 = 33 people
4. no
5. B
6. B
7. Sample answer: "Do you support spending town funds for the improvement of Main Street?"
8. inches
9. feet
10. Answers will vary.

Application and Enrichment 27G

1. (1 + 3 + 3 + 5 + 6 + 9) ÷ 6 = 27 ÷ 6 = 4.5 average per family
2.

J	L	B	R	T	M
1	3	3	5	6	9

3.

J	L	B	R	T	M
1	3	3	5	6	9
3.5	1.5	1.5	0.5	1.5	4.5

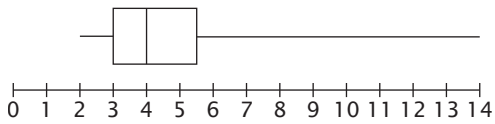
4. (3.5 + 1.5 + 1.5 + 0.5 + 1.5 + 4.5) ÷ 6 = 13 ÷ 6 = 2 1/6 ≈ 2.17

Application and Enrichment 28G

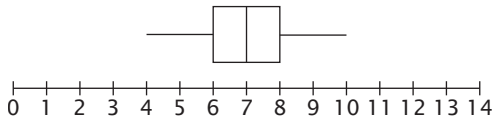
1. 2, 3, 3, 3, 3, 4, 4, 4, 5, 5, 6, 7, 14; median = 4
2. 2, 3, 3, 3, 3, 4
   1st quartile = (3 + 3) ÷ 2 = 3
3. 4, 5, 5, 6, 7, 14
   3rd quartile = (5 + 6) ÷ 2 = 5.5
4. IQR = 5.5 – 3 = 2.5
5. Range = 14 – 2 = 12 much more than twice the size of the IQR even though it is only twice as many data.
6. Mean = (2 + 3 + 3 + 3 + 3 + 4 + 4 + 4 + 5 + 5 + 6 + 7 + 14) ÷ 13 = 4.8, which is 0.8 longer than the median

Application and Enrichment 29G

1.



2.



3. symmetrical

Application and Enrichment 30G

The student should review the main ideas and use them when observing and recording real-life data.