

**Math Essentials 10 Teacher Learning Centre  
Answer Links**

**<Section 7.1 Answers>**

**Answers to Activity Questions (pages 148–151)**

1. a) 3 : 4      b) 1 : 2
2. a) 4 : 11      b) 2 : 11
3. a)  $\frac{4}{11}$       b)  $\frac{2}{11}$
4. Example: a) 24 h; 8 h; 16 h  
b) 16 : 8, 16 : 24, 8 : 16
5. Example: a) 168 h  
b) 56 h, 112 h  
c) 56 : 112  
d) 8 : 16; YES. The two ratios are equivalent. If you multiply both terms of the ratio 8 : 16 by 7, you get the ratio 56 : 112.
6. a) 100 km  
b) 200 km  
c) 500 km
7. a) \$12      b) \$36      c) \$72
8. a) \$20/h      b) \$8/h      c) \$12.50/h
9. a) \$12/h      b) \$84      c) 10 h
10. a) 5 min  
b) 105 min or 1 h 45 min  
c) NO. Example: This is only an average. I will likely vary my reading rate.
11. a) 7 min  
b) 70 min or 1 h 10 min  
c) NO. Example: This is only an average. I will likely vary my walking speed.

<Section 7.2 Answers>

Answers to Activity Questions (pages 154–157)

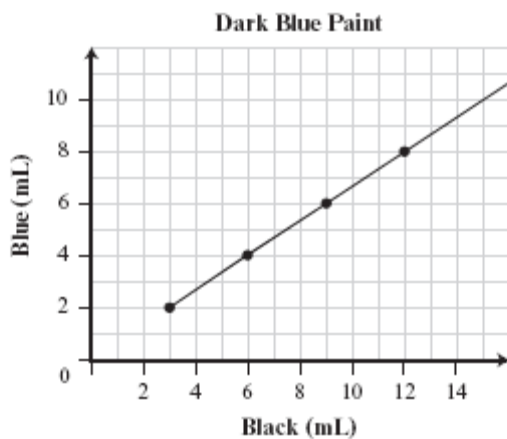
1. a) 5 : 3  
b)  $5 + 3 = 8$   
c) 5 L, 3 L
2. a) It is half of the amount in question 1.  
b) 2.5 L, 1.5 L
3. a)  $\frac{5}{8}$ , 10 L  
b)  $\frac{3}{8}$ , 6 L  
c)  $10 \text{ L} + 6 \text{ L} = 16 \text{ L}$ ; You get to see if the sum of the two parts gives you the total amount of punch.
4. a) 1 : 2  
b) 1 : 3  
c) 2 : 3
5.  $30 \times 50 \text{ mL} = 1500 \text{ mL}$
6. a)  $\frac{1}{3}$   
b) 500 mL
7. a)  $\frac{2}{3}$   
b) 1000 mL
8.  $500 \text{ mL} + 1000 \text{ mL} = 1500 \text{ mL}$
9.  $40 \times 100 \text{ mL} = 4000 \text{ mL}$
10. a)  $300 : 200 = 3 : 2$   
b) 5
11. a)  $\frac{3}{5}$ , 2400 mL  
b)  $\frac{2}{5}$ , 1600 mL  
c) Add the second parts of a) and b) and they should give you 4000 mL;  
 $2400 \text{ mL} + 1600 \text{ mL} = 4000 \text{ mL}$

<Section 7.3 Answers>

Answers to Activity Questions (pages 158–161)

1. a) purple  
b) orange  
c) green
2. a) 10 mL  
b) 4 mL  
c) 6 mL
3. a) 3  
b) 2  
c) 6
4. a) 60, 60  
b)  $20\text{ cm} \times 10\text{ cm} = 200\text{ cm}^2$ ;  
 $60\text{ cm} \times 30\text{ cm} = 1800\text{ cm}^2$   
c) 9
5. Orange: 2 mL, 9, 18 mL; Green: 6 mL, 9, 54 mL;  
Dark blue: 5 mL, 9, 45 mL
6. Total for painting: 1 mL, 4 mL, 5 mL, 3 mL;  
Total for poster: 9 mL, 36 mL, 45 mL, 27 mL
7. Black: 6, 9, 12; Blue: 4, 6, 8

8. a)



- b) To increase the amount of dark blue paint, go up and to the right along the graph, and look at the corresponding axes to see how much of each kind of paint you need.

<Section 7.4 Answers>

Answers to Activity Questions (pages 166–167)

1. a)  $20:10:5$

b)  $4:2:1$

c) 7

2. a)  $\frac{20}{35} = \frac{4}{7}$

b)  $\frac{4}{7} \times 42 \text{ games} = 24 \text{ games}$

c) 12 games

d) 6 games

3. a)  $1 \times 4 = 4 \text{ cups}$

b)  $5 \times 4 = 20 \text{ cups}$

4. a)  $2:1:5 = \square : \square : 30$

b)  $2 \times 6 = 12 \text{ cups}$

c)  $1 \times 6 = 6 \text{ cups}$

**<Section 7.5 Answers>**

**Answers to Activity Questions (pages 169–171)**

1. a) 2 : 3 : 4  
b) 2 : 5 : 3
2. a) 15, 6  
b) 15, 6, 9
3. a) 27  
b) 5 : 2 : 3; 2, 3, 45, 18, 27  
c) 45, 18, 27
4. a) Area =  $10 \text{ m} \times 6 \text{ m} = 60 \text{ m}^2$   
b) Volume =  $60 \text{ m}^2 \times 0.25 \text{ m} = 15 \text{ m}^3$
5. a) 15, 6  
b)  $15 \text{ m}^3$ , 15  
c) Sand: 15 kg, 15, 225 kg; Gravel: 6 kg, 15, 90 kg;  
Cement: 9 kg, 15, 135 kg
6. Write the ratio in simplest form by dividing each amount by 45.  
 $225 : 90 : 135 = 5 : 2 : 3$

**<Section 7.6 Answers>**

**Answers to Activity Questions (pages 172–175)**

1. a) \$11/h  
b) 6 stairs/s  
c) 7 cm/h  
d) 20 points/game

Answers may vary for questions 2 to 4.

Examples:

2. a)  $12 \text{ m} \times 10 \text{ m}$   
b)  $12 \text{ m} \times 10 \text{ m} = 120 \text{ m}^2$   
c) 24  
d)  $\frac{24 \text{ people}}{120 \text{ m}^2} = 0.2 \text{ people/m}^2$   
e) 48  
f)  $\frac{48 \text{ people}}{120 \text{ m}^2} = 0.4 \text{ people/m}^2$
3. a)  $45 \text{ m} \times 30 \text{ m} = 1350 \text{ m}^2$   
b)  $\frac{24 \text{ people}}{1350 \text{ m}^2} = 0.018 \text{ people/m}^2$ ;  $0.02 \text{ people/m}^2$

4. a) In a gym people are moving around, and if there is not enough space someone could get hurt or the activity may not run as smoothly as it could.
- b) The population density on the stage is less than in the gym because the parents are seated but students on the stage need space to perform.
5. a)  $\frac{33\,000\text{ people}}{2\text{ million km}^2} = 16\,500\text{ people/million km}^2$
- b)  $\frac{35\,000\,000\text{ people}}{10\text{ million km}^2} = 3\,500\,000\text{ people/million km}^2$
- c) Nunavut is a large territory, but few people live there. Canada is big, but has many large cities.

### <Section 7.7 Answers>

#### Answers to Activity Questions (pages 176–179)

1. YES
2. a) Divide the price per kilogram by 2.2; \$2.96/lb
- b) Darlene's Deli
3. a)  $\frac{\$8.39}{1\text{ kg}} = \frac{\$8.39}{2.2\text{ lb}}$
- b) \$3.81/lb
- c) Darlene's Deli: \$3.99/lb;  
Mike's Meat: \$3.81/lb
4. a)  $\frac{\$6.99}{1\text{ kg}} = \frac{\$6.99}{2.2\text{ lb}}$
- b) \$3.17/lb
- c) Darlene's Deli: \$2.99/lb;  
Mike's Meat: \$3.17/lb
5. a) Mike's Meat: roast beef
- b) Darlene's Deli: ham, smoked turkey

6. 8.9¢/oz, 8.6¢/oz, 8.45¢/oz
7. 300 mL, 450 mL, 600 mL
8. 0.3¢/mL, 0.29¢/mL, 0.28¢/mL
9. a) Regular  
b) Mike's Meats
10. a) 1000 oz  
b) 25 : 1000, 25 oz
11. a) 400  
b) 160

**<Section 7.8 Answers>**

**Answers to Activity Questions (pages 181–183)**

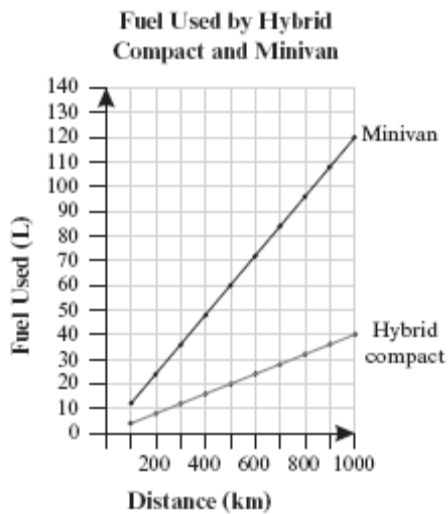
Answers to questions 1 to 3 may vary depending on students' findings.

1. Ensure that the ratio reflects the data from the tally charts correctly.
2. a) 1 week = Tally of items  $\times$  7  
b) 4 weeks = 1 week  $\times$  4  
c) 8 weeks = 1 week  $\times$  8  
d) 10 weeks = 1 week  $\times$  10
3. a) Ensure that students accurately plot points from question 2.  
b) Ensure that students extrapolate accurately to determine the number of items in 12 weeks.
4. a) 8.05 kg/week  
b) 418.6 kg/year
5. a) 418.6 kg/year  
b) 113 kg/year
6. a) 113 kg/year  
b) 3 995 000 000 kg/year
7. a) 620 400 000 kg  
b) 790 000 000 kg

<Section 7.9 Answers>

Answers to Activity Questions (pages 185–187)

1. a) 2:1, 2:1  
b) 2 L/person, 1.5 L/person  
c) 7:6, 1:1
2. a) 16, 24, 32, 40  
b) 32, 48, 64, 80  
c) 48, 72, 96, 120  
d) 56, 84, 112, 140
3. a), b)



- c) The hybrid line does not go as high and the slope is less steep.
  - d) minivan: 60 L; hybrid: 20 L
  - e) minivan: 250 km; hybrid: 700 km
4. a) 140 L, 2800 L  
b) 40 L, 800 L  
c) 2000 L  
d) Answer depends on current cost of gas.  
Example: At \$1.40/L, the savings would be \$2800.



**<Chapter 7 Review Answers>**

**Answers to Chapter 7 Review (pages 190–191)**

1. c)  $\$1.99 \div 5$  or about  $\$0.40$
2. d) 3 : 5
3. e)  $\$55.80$  for 60 L
4. a)  $\$9.50/\text{h}$
5. b)  $10 : 1 = 50 : 5$
6. a)  $15 : 10 = 3 : 2$   
b)  $14 : 18 = 7 : 9$
7. a)  $\$1.95/\text{lb}$   
b)  $\$0.43/\text{pen}$
8. a) 20 mL of green peppers  
b) 400 mL of cream cheese, 400 mL of pureed tomato, and 100 mL of green peppers
9. Theo:  $\$16$ ; Sara:  $\$24$
10. a) 48 L  
b) Answer depends on current cost of gas.  
Example: At  $\$1.40/\text{L}$ , the gas will cost  $\$67.20$ .
11. a)  $420 \text{ m}^3$   
b)  $4 \text{ m}^3/\text{min}$   
c) 105 min or 1 hr 45 min  
d) 210 min or 3 hr 30 min
12. a) 100 : 200 : 250  
b) 2 : 4 : 5  
c) 300 g Romano; 750 g cottage cheese