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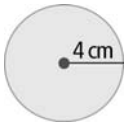
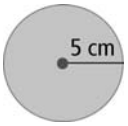
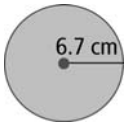
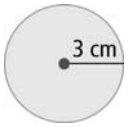
Chapter 8 *MathLinks 7*
Student Resource Answers

8.1 Construct Circles, pages 271–272

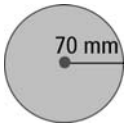
4. a) 

b) 

c) 

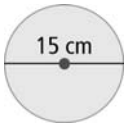
5. a) 

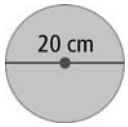
b) 

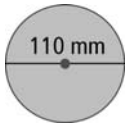
c) 

6. a) 10 cm **b)** 16 cm **c)** 190 mm

7. a) 2 cm **b)** 3.5 cm **c)** 43 mm

8. a) 

b) 

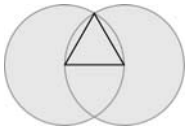
c) 

9. a), b) Length AB is the radius of each circle.

10. Circle A is bigger. Circle A has a radius of 25 cm and a diameter of 50 cm. Circle B has a radius of 22.5 cm and a diameter of 45 cm.

11. Always true

12. Designs may vary.

13. 

a) triangle

b) Answers will vary. The sides of the triangle are all radii of one or both of the 2 intersecting congruent circles.

14. Answers may vary. **15.** Answers may vary.

8.2 Circumference of a Circle, pages 278–279

3. a) 6 km; 6.6 km **b)** 3 m; 2.8 m

4. a) 90 mm; 87.9 mm **b)** 6 cm; 6.3 cm

5. 9 km **6.** 41 km

7. a) 6 km; 5.0 km **b)** 18 m; 17.0 m

8. a) 6 m; 6.3 m **b)** 120 mm; 125.6 mm

9. 30.1 m **10.** 7.5 m

11. 56.5 m **12.** 10 frames

13. a) 144.1 m **b)** 24 cars

14. Always true

15. Answers may vary. Yes. The diameter of the hoop is 0.51 m. The basketballs have a combined diameter of 0.48 m. 0.51 – 0.48 = 0.03. Therefore, 2 basketballs could fit through the hoop at the same time.

16. Answers may vary. For example: If you use $C = \pi \times d$, the diameter would equal the circumference divided by pi.

17. a) 70.4 mm **b)** 27.3 cm

18. 5.7 m **19.** approximately 71 more turns

8.3 Area of a Circle, pages 285–286

4. a) 2700 mm^2; 3215.4 mm^2

b) 3 km^2; 1.5 km^2

5. a) 675 cm^2; 706.5 cm^2 **b)** 27 m^2; 36.3 m^2

6. 113.0 m^2 **7. a)** 1384.7 cm^2 **b)** 0.1 m^2

8. a) 551.3 cm^2 **b)** 0.07 km^2

9. a) 171.9 m^2 **b)** 314 mm^2

10. 510.4 m^2 **11.** 9499 cm^2 **12.** $1059.75

13. 3039.5 cm^2

14. Never true. For a circle with radius 5 cm, the area is 78.5 cm^2. If the radius is doubled to 10 cm, the area of the new circle would be 314 cm^2. This is 4 times the area of the other circle.

15. 414.48 mm^2

16. a) white button: 706.5 cm^2; red: 10 977.4 cm^2; white: 35 051.9 cm^2; blue: 58 419.7 cm^2

b) 105 155.5 cm^2

17. Yes, if $r^2 = 2r$. This will occur when the radius is 2.

18. a)–c) Answers may vary depending on the size of the circles drawn in part a).

d) Answers may vary. The area for the parallelogram is less than the area of the circle. As the circle is divided into even more wedges, the areas will become closer in value.

19. 12.6 cm^2 **20.** 154 m^2

8.4 Interpret Circle Graphs, pages 290–291

3. a) grade 7 **b)** 120 students

c) 30 more students

4. a) 800 books **b)** 2600 books **c)** 15%

5. a) walk **b)** 26 **c)** 468

6. a) Individual skills

b) Individual Skills, Team Skills, Warm Up, Cool Down; Individual Skills, Scrimmage, Warm Up

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(continued)

c) Warm Up: 6 min
Individual Skills: 24 min
Team Skills: 12 min
Scrimmage: 15 min
Cool Down: 3 min

Time	Activity
5:00 p.m.	Warm Up
5:06 p.m.	Individual Skills
5:30 p.m.	Team Skills
5:42 p.m.	Scrimmage
5:57 p.m.	Cool Down
6:00 p.m.	Finish

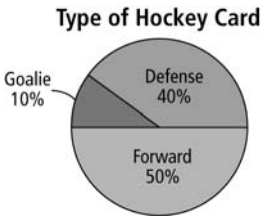
7. a) Compact **b)** 8
8. a) Pop **b)** Ms. Torregrosa's class
c) Jazz **d)** Pop, Rock
9. a)–f) Answers may vary.

8.5 Create Circle Graphs, pages 296–297

4. a)

Type	Number of Cards	Percent of Total	Decimal Value Equivalent	Central Angle
Forward	20	50%	0.50	180°
Defense	16	40%	0.40	144°
Goalie	4	10%	0.10	36°
Totals	40	100%	1.00	360°

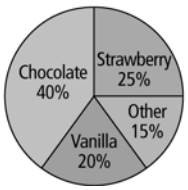
b)



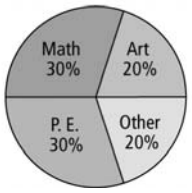
5. a)

Favourite Ice Cream	Number of Students	Percent of Total	Decimal Value Equivalent	Central Angle
Chocolate	24	40%	0.40	144°
Strawberry	15	25%	0.25	90°
Vanilla	12	20%	0.20	72°
Other	9	15%	0.15	54°
Totals	60	100%	1.00	360°

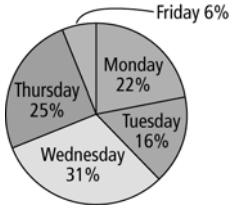
b)



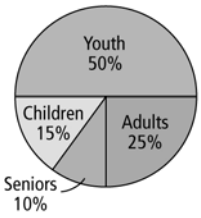
6.



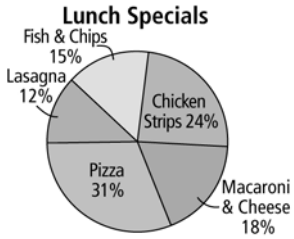
7.



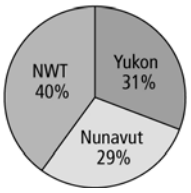
8.



9.



10. a)



b) Answers may vary depending on population figures found on Internet.
c) Answers may vary.

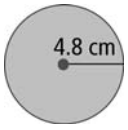
11. a)–e) Answers may vary.
12. a)–c) Answers may vary.
13. a)–d) Answers may vary.

Chapter 8 Review, pages 298–299

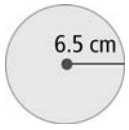
1. B **2.** F **3.** A **4.** C **5.** E **6.** D **7.** H

8. a)

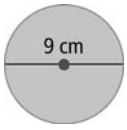
b)



c)



9. a)



b)

c)

10. No, point B does not lie within the circle.
11. a) 33.9 cm **b)** 38.3 cm
12. a) 18.8 m **b)** 5.7 km
c) 4.4 m **d)** 659.4 cm
13. 3.8 m
14. a) 20.6 m **b)** $149.35
15. a) 1218.6 cm^2 **b)** 221.6 cm^2
16. a) 52.8 m^2 **b)** 5.3 km^2
c) 193.5 m^2 **d)** 514.5 mm^2
17. 50.2 m^2 **18.** 69.1 cm^2 **19.** 625
20. a) 12 **b)** 15% **c)** soccer and baseball

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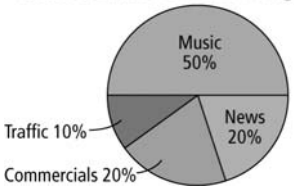
21. **Radio Station Air Time Programming**



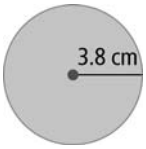
22. a) **First Nations Population**

b) Answers may vary. The southern provinces have warmer weather and easier access to more resources.

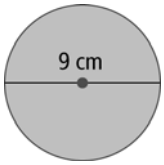
Chapter 8 Practice Test, pages 301–302

1. D **2.** C **3.** C **4.** D **5.** 12 cm

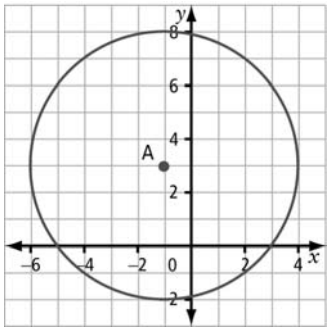
6.



7.



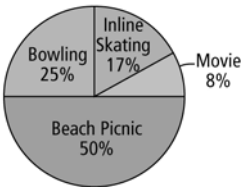
8.



a) radius of the circle
b) 5 cm

9. a) \$4.96 **b)** \$1.96
10. 9.1 cm^2 **11.** 18.5 cm^2
12. a) Animation
b) Other and Movies and Music; 189
c) Posterific, 11

13. a) **Year End Field Trip Choices (Grade 7)**



b) Movie and Bowling

14. a) 20.56 m **b)** 6.55 m **c)** 8.66 m^2

15. Answers may vary. No. If the circumference of a circle is 20 cm, then the area of the circle is 31.8 cm^2. If the circumference is doubled to 40 cm, then the area of the new circle is 127.4 cm^2. The new area is 127.4 ÷ 31.8 ≈ 4 times larger than the original area, not double the area.

Chapters 5–8 Review, pages 304–306

1. a) $\frac{4}{8}$ or 4:8 or 50% **b)** $\frac{2}{8}$ or 2:8 or 25%
c) $\frac{0}{8}$ or 0:8 or 0% **d)** $\frac{8}{8}$ or 8:8 or 100%

2.

		Spinner			
		1	2	3	4
Coin Toss	Heads (H)	H, 1	H, 2	H, 3	H, 4
	Tails (T)	T, 1	T, 2	T, 3	T, 4

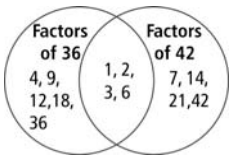
3. a)

		Second Letter				
		a	e	i	o	u
First Letter	a	a, a	a, e	a, i	a, o	a, u
	e	e, a	e, e	e, i	e, o	e, u
	i	i, a	i, e	i, i	i, o	i, u
	o	o, a	o, e	o, i	o, o	o, u
	u	u, a	u, e	u, i	u, o	u, u

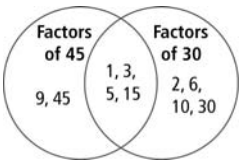
b) $\frac{1}{25}$ **c)** $\frac{2}{25}$ **d)** $\frac{9}{25}$

4. a) $\frac{4}{30}$ or 13.3% **b)** $\frac{1}{6}$ or 16.7%
c) Answers may vary. The experimental probability is less than the theoretical probability.

5. a)



b)



6. a) $\frac{3}{5}$ **b)** $\frac{14}{14} = 1$ **c)** $\frac{8}{8} = 1$ **d)** $\frac{2}{3}$

7. a) $\frac{2}{7}$ **b)** 0 **c)** $\frac{1}{2}$ **d)** $\frac{3}{5}$

8. No, she needs another $\frac{1}{8}$ of a bag.

9. a) $\frac{1}{8}$ **b)** $\frac{1}{2}$ **c)** $4\frac{1}{10}$ **d)** $2\frac{3}{4}$

10. a) $\frac{7}{9}$ **b)** $\frac{9}{20}$ **c)** $3\frac{2}{3}$ **d)** $3\frac{1}{2}$
e) $1\frac{5}{12}$ **f)** $8\frac{3}{10}$

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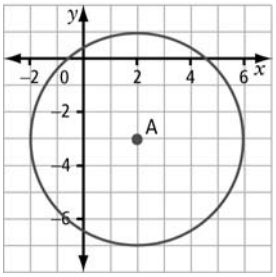
11. a) $1\frac{7}{12}$ trays **b)** $\frac{3}{8}$ of a tray

c) $1\frac{23}{24}$ trays

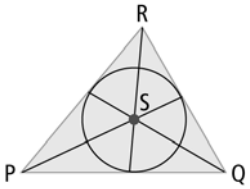
12. a) 

b) No

13. a) circumference: 27.0 cm; area: 58.1 cm^2

b) circumference: 32.0 cm; area: 81.7 cm^2

14. 188.4 cm

15. a)–c) 

16. It is 4 times larger. For example, if r = 5 cm, A = 78.5 cm^2. If r = 10 cm, A = 314 cm^2. 314 ÷ 78.5 = 4

17. a) Scrimmage

b) Scrimmage, Technique, Warm Up; Scrimmage, Drills, Warm Up

c) Warm Up: 6 min; Drills: 15 min; Technique: 15 min; Scrimmage: 21 min; Cool Down: 3 min

Time	Activity
4:00 p.m.	Warm Up
4:06 p.m.	Drills
4:21 p.m.	Technique
4:36 p.m.	Scrimmage
4:57 p.m.	Cool Down
5:00 p.m.	Finish

18. **Favourite Weekend Activities**