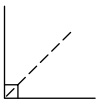
Answers

Get Ready, pages 560–561

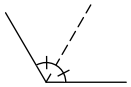
1. a) 15.7 cm **b)** 11.618 cm

2. Estimates may vary. **a)** 25° **b)** 100°

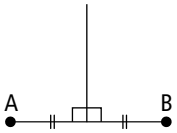
3. a)



b)



4. a)



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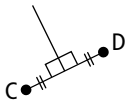


Math Link

2. b) diameter

3. b) centre

4. a) Estimates may vary. Example: 90° **b)** all angles are 90° **c)** Answers will vary. Example: My estimate was the same. **d)** 360°

5. equilateral; the sides are all the same length and the angles are equal

6. Answers will vary. Examples: Oakley, Starbucks Coffee ®

10.1 Warm Up, page 563

1. a) AC, BC, FC, EC, DC **b)** AE, BD

2. a) 13 cm **b)** 5 cm

3. a) 36 **b)** 100 **c)** 4 **d)** 7 **e)** 90 **f)** 45

10.1 Exploring Angles in a Circle, pages 564–574

Working Example 1: Show You Know

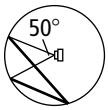
a) 55° **b)** 110°

Working Example 2: Show You Know

a) 90° **b)** 13 cm

Working Example 3: Show You Know

Answers may vary.



The inscribed angle is half the central angle since it shares the same arc.

Communicate the Ideas

1. ∠BCA is a central angle and shares the same arc AB with ∠BDA .

2. 90° because the inscribed angle is half the central angle (180 ÷ 2 = 90).

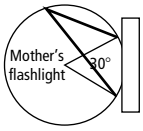
Practise

3. 41°

4. a) 23° **b)** 46°

5. a) 90° **b)** 8 cm

6. Answers will vary. Example:



Apply

7. a) 76° **b)** ISOSCELES; AC and DC are both radii, so they are equal.

8. a) 15° **b)** 24° **c)** 48° **d)** 30°

9. a) The measure of ∠ABE is 56°. **b)** The measure of ∠AGB is 90°.

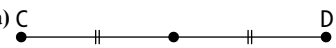
10. No. Answers will vary. Example: ΔADB is not a right triangle.

10.1 Math Link

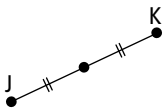
a) Answers will vary. **b)** The central angle is twice the inscribed angle.

10.2 Warm Up, page 575

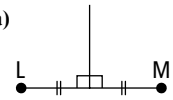
1. a)



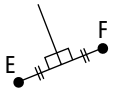
b)



2. a)



b)



3. 3 cm

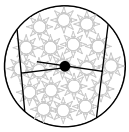
4. a) 20 cm **b)** 4.5 cm

10.2 Exploring Chord Properties, pages 576–583

Working Example 1: Show You Know

8 cm

Working Example 2: Show You Know



Draw 2 chords. Draw the perpendicular bisectors of each chord. The point where the perpendicular bisectors meet is the centre.

Communicate the Ideas

1. a) ∠ADC is 90°. **b)** AD and DB are equal.

2. *Step 1:* Find the midpoint of each chord.
Step 2: Draw the perpendicular bisector of each chord.
Step 3: Mark with a dot the point where the perpendicular bisectors meet.

Practise

3. 9 cm

4. 8.1 mm

5. Draw 2 chords. Draw the perpendicular bisectors of each chord. The point where the perpendicular bisectors meet is the centre.

Apply

6. Chord AB is 30 m.

7. 5.2 cm

8. The area of ΔABD is 16 cm^2.

10.2 Math Link

Answers will vary.

10.3 Warm Up, page 584

1. a) equilateral **b)** right **c)** isosceles **d)** isosceles

2. AB, ED

3. a) 38° **b)** 100°

4. a) 115° **b)** 138°

10.3 Tangents to a Circle, pages 585–599

Working Example 1: Show You Know

a) 90° **b)** 56° **c)** 28°

Working Example 2: Show You Know

a) 40 mm **b)** 20 mm **c)** 34.6 mm

Working Example 3: Show You Know

73.3 m

Communicate the Ideas

1. No. The tangent must be outside the circle.

2. No. ∠CBA would be 90° if AB was tangent.

3. a) isosceles; CG and CL are both radii, so they are equal. **b)** 20° **c)** 90°; JK is tangent to the circle at H.

Practise

4. a) 90° **b)** 150° **c)** isosceles **d)** 15°

5. a) 8 m **b)** 4 m **c)** 90° **d)** 7 m

6. a) 16.8 m **b)** The dog can get 11.8 m from the cat door.

Apply

7. FE is 12 cm.

8. The measure of ∠QRT is 148°.

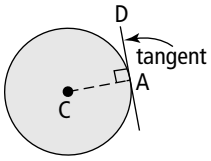
9. The perimeter of the rectangle is 30 cm.

10.3 Math Link

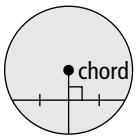
Answers will vary.

Graphic Organizer, page 600

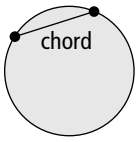
tangent: a line that touches a circle at exactly 1 point



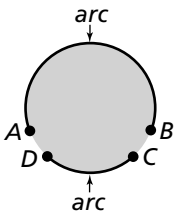
perpendicular bisector of a chord: a perpendicular line from the centre of a circle to the midpoint of a chord



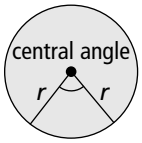
chord: a line segment with both endpoints on the circle



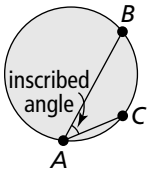
arc: a part of the circumference of the circle



central angle: an angle created by 2 radii



inscribed angle: an angle formed by 2 chords that have a common endpoint



Chapter Review, pages 601–604

1. inscribed angle **2.** central angle **3.** radius **4.** chord **5.** perpendicular bisector **6.** tangent

7. a) 24° **b)** 48°

8. a) 48° **b)** 48°

9. 90°

10. 28°

11. 48 m

12. 6.3 cm

13. 133°

14. 6 mm

15. The plane travelled 130.8 m.

Key Word Builder, page 605

1. arc **2.** central angle **3.** chord **4.** circumference **5.** diameter **6.** inscribed angle **7.** midpoint **8.** perpendicular bisector **9.** Pythagorean relationship **10.** radius **11**. radii **12.** tangent

A	T	I	M	S	M	N	E	A	A	P	I	G	S	A	N	R	L	E	T	G	P	H
U	E	N	R	A	L	H	I	I	H	E	I	S	U	E	E	I	I	E	I	A	I	D
T	C	R	E	E	P	I	R	U	I	R	C	I	C	U	R	L	I	D	R	R	B	M
T	G	A	I	N	E	E	C	E	A	P	A	C	E	C	R	R	A	T	R	C	U	E
E	U	A	N	E	E	H	T	D	U	E	R	M	R	C	A	T	I	A	C	E	I	A
P	Y	T	H	A	G	O	R	E	A	N	R	E	L	A	T	I	O	N	S	H	I	P
G	R	A	E	I	A	S	N	A	R	D	C	S	R	A	F	C	C	G	R	A	E	M
P	O	D	R	P	C	E	P	H	C	I	R	C	U	M	F	E	R	E	N	C	E	N
R	R	E	N	S	R	P	R	I	H	C	N	P	C	I	R	E	G	N	O	C	I	R
I	C	L	L	R	E	O	U	R	O	U	B	N	I	P	R	C	N	T	N	O	G	S
E	B	S	O	O	E	S	D	D	R	L	E	A	I	E	I	A	B	O	P	S	G	N
I	I	N	S	C	R	I	B	E	D	A	N	G	L	E	R	H	C	U	R	P	N	D
I	P	C	C	E	N	C	E	N	T	R	A	L	A	N	G	L	E	D	C	R	H	E
S	P	M	E	R	I	R	F	H	D	B	R	R	P	S	A	R	R	S	I	E	S	O
A	A	R	E	N	A	I	E	E	D	I	A	M	E	T	E	R	N	D	R	D	E	I
I	A	R	P	A	I	I	T	L	C	S	D	M	E	H	S	C	C	R	U	R	T	I
R	D	P	U	R	P	N	A	T	A	E	I	E	T	P	A	T	D	G	O	P	F	E
A	R	D	U	S	R	T	N	O	H	C	U	E	S	T	C	O	O	R	L	N	R	S
L	M	T	M	I	D	P	O	I	N	T	S	E	N	C	A	E	I	C	C	E	E	T
Y	T	T	N	N	C	R	I	C	U	O	D	R	R	R	E	I	I	N	A	D	P	N
G	R	R	O	S	R	U	A	P	R	R	A	D	I	I	R	I	E	H	N	C	T	L

Practice Test, pages 606–608

1. C
2. B
3. 36°
4. 9.4 cm
5. 50°
6. a) 41°; Inscribed angles subtended by the same arc are equal. **b)** 82°; The measure of the central angle is twice the measure of the inscribed angle on the same arc.
7. 13.7 mm

Math Link: Wrap It Up!, page 608

Answers will vary.

Challenge, page 609

Answers will vary.