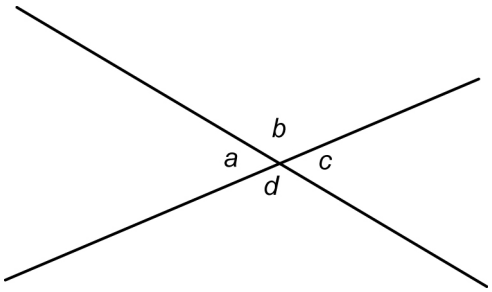
BLM Answers

Get Ready

1. a) $a = 55°$, $b = 70°$, $c = 70°$, $d = 110°$
b) $m = 90°$, $n = 45°$, $p = 27°$
c) $m = 115°$, $x = 45°$, $y = 65°$, $z = 70°$, $w = 70°$
d) $d = 60°$, $e = 70°$, $f = 50°$

2. Answers may vary. For example:



Since a and b make up a straight angle,
$a + b = 180°$ ①
Since b and c make up a straight angle,
$b + c = 180°$ ②
Subtract equation ② from equation ①
to get $a - c = 0$, or $a = c$.
Since c and d make up a straight angle,
$c + d = 180°$ ③
Subtract equation ③ from equation ②
to get $b - d = 0$, or $b = d$.
Since $a = c$ and $b = d$, opposite angles are equal.

3. a) 6.7 m **b)** 8.1 cm **c)** 8.4 mm **d)** 7.1 km

4. a) $\frac{5}{12}$ **b)** $\frac{1}{9}$

5. a) $x = \frac{20}{7}$ **b)** $y = \frac{16}{3}$
c) $m = -5$ or 5 **d)** $x = -3$ or 2

6. a) translation **b)** rotation
c) reflection **d)** dilatation

Section 7.1 Practice Master

1. Order of vertices may vary. For example:
a) $\triangle DEF \sim \triangle PQR$ **b)** $\triangle JKL \sim \triangle STU$
c) $\triangle SRQ \sim \triangle STU$ **d)** $\triangle EAB \sim \triangle ECD$

2. Answers may vary. For example:
a) $\triangle MNQ \sim \triangle OPQ$ because $\angle NMQ = \angle POQ = 90°$ and $\angle MQN = \angle OQP = 90°$ (common angles).
b) $\triangle PQR \sim \triangle TSR$ because $\angle PQR = \angle TSR$ (alternate angles) and $\angle QPR = \angle STR$ (alternate angles).
c) $\triangle ACE \sim \triangle BCD$ because $\angle AEC = \angle BDC$ and $\angle ACE = \angle BCD$ (common angles).

3. Answers may vary. For example:
a) $\triangle ABC \sim \triangle DEF$ because the ratios of corresponding sides are all equal to 2:1.
b) Using the Pythagorean theorem, MC ~ 18.0 cm. Then, $\triangle MCD \sim \triangle KMC$ because the ratios of two pairs of corresponding sides are equal to 2:1.

4. a) $\angle BAC = \angle EDF$, $\angle ACB = \angle DFE$, $\angle CBA = \angle FED$; BA:ED = AC:DF = CB:FE
b) $\angle MCD = \angle KMC$, $\angle CDM = \angle MCK$, $\angle DMC = \angle CKM$; MC:KM = CD:MC = DM:CK

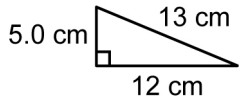
5. Answers will vary.

6. Answers may vary. For example: No. The three angles in a scalene triangle may not equal the three angles in another scalene triangle.

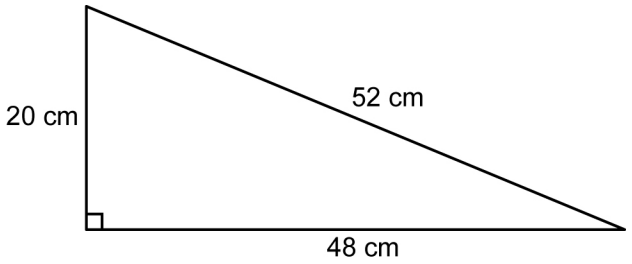
7. a) width 8 in. length 12 in.
b) width 12 in. length 18 in.
c) width 2 in. length 3 in.
d) Answers may vary. For example: The area of each enlarged or reduced photo equals the area of the original photo multiplied by the square of the scale factor.

Section 7.2 Practice Master

1. a)



b) 4 **c)** 20 cm, 48 cm
d)



2. a) area of first triangle 30 cm^2; area of second triangle 480 cm^2
b) The area of the second triangle equals the area of the first triangle times 16.
c) The area factor is equal to the square of the scale factor.

3. a) $d = 12$ cm, $e = 10$ cm **b)** $x = 9$ mm, $z = 15$ mm
c) $j = 12$ m, $n = 15$ m **d)** $p = 10$ km, $r = 12$ km

4. a) 6 cm **b)** 4.5 m

5. a) 81 cm^2 **b)** 100 m^2

6. 21 m

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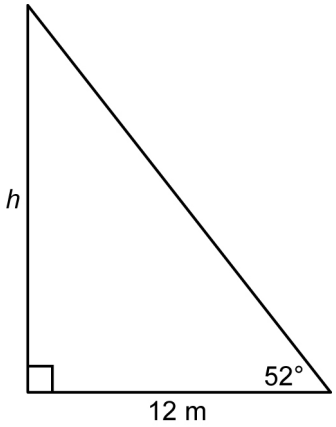
Section 7.3 Practice Master

1. **a)** 0.4286 **b)** 0.5714 **c)** 0.8125 **d)** 0.8947
2. **a)** 2.3333 **b)** 1.7500 **c)** 1.2308 **d)** 1.1176
3. **a)** 0.7813 **b)** 0.4245 **c)** 0.1051
d) 0.5774 **e)** 1.5637 **f)** 7.8062
4. **a)** $\theta = 36°$ **b)** $\angle C = 23°$ **c)** $\angle D = 70°$
d) $\angle M = 60°$ **e)** $\theta = 33°$ **f)** $\angle L = 55°$
5. **a)** $\angle P = 52°$, $\angle Q = 38°$ **b)** $\angle T = 58°$, $\angle U = 32°$
6. **a)** 2.9 cm **b)** 9.1 mm
7. **a)** 7.3 m **b)** 20.9 m
8. **a)**



b) 15.4 m

Section 7.4 Practice Master

1. **a)** $\sin\theta = \frac{3}{5}$, $\cos\theta = \frac{4}{5}$, $\tan\theta = \frac{3}{4}$

b) $\sin\theta = \frac{5}{13}$, $\cos\theta = \frac{12}{13}$, $\tan\theta = \frac{5}{12}$

c) $\sin\theta = \frac{15}{29}$, $\cos\theta = \frac{25}{29}$, $\tan\theta = \frac{3}{5}$

d) $\sin\theta = \frac{25}{32}$, $\cos\theta = \frac{5}{8}$, $\tan\theta = \frac{5}{4}$

2. **a)** $\sin A = 0.7657$, $\cos A = 0.6400$, $\tan A = 1.1964$
b) $\sin A = 0.5000$, $\cos A = 0.\ 8662$, $\tan A = 0.5772$
3. **a)** 0.9511 **b)** 0.2756 **c)** 0.8988 **d)** 0.3907
4. **a)** 0.7431 **b)** 0.0872 **c)** 0.9703 **d)** 0.8090
5. **a)** $\theta = 31°$ **b)** $\angle Q = 58°$ **c)** $\theta = 22°$ **d)** $\angle R = 55°$
6. **a)** $\theta = 43°$ **b)** $\angle W = 71°$ **c)** $\theta = 56°$ **d)** $\angle B = 26°$
7. **a)** 10.3 m **b)** 11.0 cm
8. **a)** $\angle A = 55°$, $a = 12.3$ m, $b = 8.6$ m
b) $\angle R = 56°$, $p = 11.2$ m, $r = 16.6$ m

Section 7.5 Practice Master

1. **a)** 8.6 m **b)** 9.5 m
2. 16.5 m
3. 14.6 m
4. **a)** 51°, 60° **b)** 6.4 m, 8.1 m
5. 82 m
6. 43°

Chapter 7 Review

1. Answers will vary.
2. **a)** $\triangle HFG \sim \triangle HKJ$ because $\angle HFG = \angle HKJ$ (alternate angles) and $\angle HGF = \angle HJK$ (alternate angles).
b) $\triangle RQP \sim \triangle RST$ because the ratios of corresponding sides are all equal to 2:1.
3. **a)** $x = 8$ cm, $c = 10$ cm
b) $f = 7$ cm, $g = 16$ cm
4. 5.6 m
5. $4\sqrt{3}$ m^2
6. **a)** 0.6364 **b)** 1.0435
7. **a)** $\theta = 39°$ **b)** $\angle E = 57°$ **c)** $\theta = 36°$ **d)** $\angle B = 62°$
8. **a)** 19.6 m **b)** 15.7 cm
9. 1.3 m
10. **a)** $\sin\theta = \frac{7}{25}$, $\cos\theta = \frac{24}{25}$, $\tan\theta = \frac{7}{24}$

b) $\sin\theta = \frac{3}{5}$, $\cos\theta = \frac{4}{5}$, $\tan\theta = \frac{3}{4}$

11. **a)** $\theta = 25°$ **b)** $\angle T = 61°$ **c)** $\theta = 43°$ **d)** $\angle S = 68°$
12. **a)** 19.7 cm **b)** 8.0 m
13. $p = 7.5$ m, $\angle Q = 37°$, $\angle R = 53°$
14. **a)** $\angle B = 63°$, $a = 14.5$ cm, $b = 28.5$ cm
b) $\angle P = 48°$, $y = 25.2$ m, $t = 37.7$ m
15. 7.2 m
16. 1396 m

Chapter 3 Practice Test

1. C
2. D
3. A
4. C
5. Answers will vary.
6. Answers will vary.
7. 17.3 m
8. $\angle P = 50°$, $p = 16.7$ km, $r = 21.8$ km
9. 14 m

Chapter 7 Test

1. A
2. A
3. D
4. A
5. Answers will vary.
6. Answers will vary.
7. 28.4 m
8. $\angle Y = 40°$, $y = 15.1$ m, $z = 23.5$ m
9. 10 m

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