Chapter 1 BLM Answers

BLM 1–1 Prerequisite Skills

1. a) $x = 71°$; acute isosceles
b) $a = 113°$; obtuse scalene
c) $d = 27°$; right scalene
d) $y = 53°$; acute scalene

2. a) 60° **b)** 36° **c)** 7° **d)** 82°

3. a) 166° **b)** 71° **c)** 133° **d)** 8°

4. a) 20.8 cm **b)** 2.2 m

5. a) $x = -85$ **b)** $x = 4.5$
c) $a = 15$ **d)** $d = 8$

6. a) $x = 8$ **b)** $x = 6.3$
c) $x = 2.4$ **d)** $x = 6.9$, $y = 3$

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

b) $\sin\theta = \frac{7}{25}$, $\cos\theta = \frac{24}{25}$, $\tan\theta = \frac{7}{24}$

c) $\sin\theta = \frac{24}{\sqrt{937}}$, $\cos\theta = \frac{19}{\sqrt{937}}$, $\tan\theta = \frac{24}{\sqrt{937}}$

8. No. The angle is 82°.

9. a) $\angle A = 77°$, $a = 95.2$ m, $c = 72.6$ m
b) $d = 10.7$ km, $\angle E = 31°$, $\angle F = 54°$
c) $\angle M = 55°$, $\angle N = 39°$, $\angle P = 86°$

10. 28°

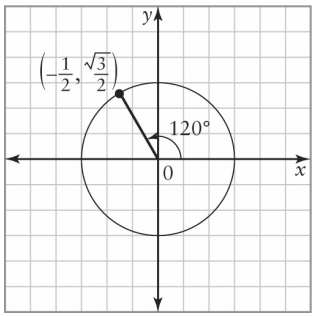
BLM 1–4 Chapter 1 Review

1. a) $\frac{\sqrt{3}}{2}$ **b)** $\frac{1}{\sqrt{3}}$ **c)** $\frac{1}{\sqrt{2}}$

2. a) 30°

b) $\sin 210° = -\frac{1}{2}$, $\cos 210° = -\frac{\sqrt{3}}{2}$, $\tan 210° = \frac{1}{\sqrt{3}}$

3. a)

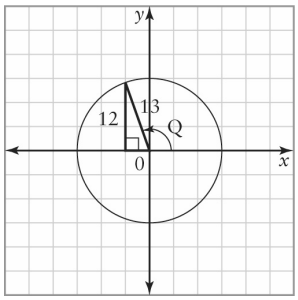


b) 240°, 300°

c) $\sin 120° = \frac{\sqrt{3}}{2}$, $\cos 120° = -\frac{1}{2}$, $\tan 120° = -\sqrt{3}$

4. a) $2\sqrt{3}$ km **b)** Pythagorean theorem

5 a)



b) $\cos Q = -\frac{5}{13}$, $\tan Q = \frac{12}{5}$

c) signs could be positive or negative

6. a) $\sin\theta = -\frac{2}{\sqrt{53}}$, $\cos\theta = \frac{7}{\sqrt{53}}$, $\tan\theta = -\frac{2}{7}$

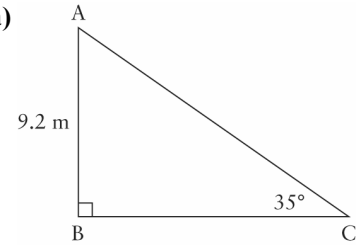
7. a) 0.9613; 106°
b) –0.7547; 139°
c) –2.9042; 109°

8. 67°, 247°;
$\sin 67° = \frac{12}{13}$, $\cos 67° = \frac{5}{13}$;
$\sin 247° = -\frac{12}{13}$, $\cos 247° = -\frac{5}{13}$

9. 135°, 225°

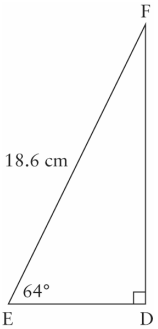
10. a) 4.7 m **b)** 9.3 cm **c)** 15.9 m

11. a)



$\angle A = 55°$, $a = 13.1$ m, $b = 16.0$ m

b)



$\angle F = 26°$, $e = 16.7$ cm, $f = 8.2$ cm

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12. **a)** 52° **b)** 8.5 m

13. **a)** 13.7 m **b)** 11.8 km

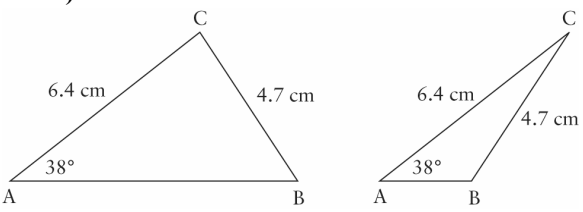
14. **a)** 43° **b)** 83°

15. **a)** $\angle B = 18°$, $\angle C = 57°$, $b = 5.6$ m

b) $\angle D = 122°$, $e = 20.5$ cm, $f = 9.9$ cm

16. **a)** two

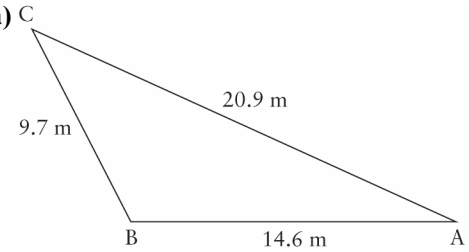
b)



c) 7.6 cm, 2.5 cm

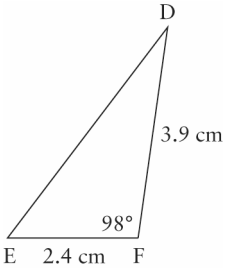
17. **a)** 10.0 m **b)** 47.7 km

18.a)



$\angle A = 24°$, $\angle B = 117°$, $\angle C = 39°$

b)

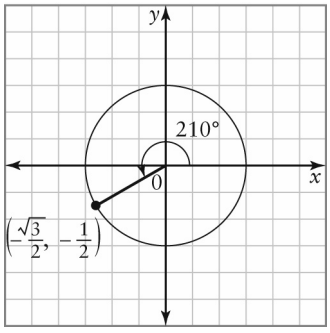


$f = 4.9$ cm, $\angle D = 29°$, $\angle E = 53°$

19. 8°

BLM 1–5 Chapter 1 Practice Test

1. **a)**



b) 150°, 330°

c) $\sin 210° = -\frac{1}{2}$, $\cos 210° = -\frac{\sqrt{3}}{2}$, $\tan 210° = \frac{1}{\sqrt{3}}$

2. $2\sqrt{3}$ m, $\cos\theta = -\frac{3}{\sqrt{73}}$, $\tan\theta = \frac{8}{3}$

3. **a)** $\sin\theta = -\frac{8}{\sqrt{73}}$

b) 249°

4. 135°, 315°

5. **a)** 0.6157 **b)** 38°

6. $\pm\sqrt{15}$

7. **a)** $-1, \frac{1}{2}$

b) same, except substitute cos θ for x

c) 60°, 180°, 300°

8. **a)** 6.2 m **b)** 10.7 cm

9. 311.1 ft

10. 7.2 m

11. **a)** $\angle D = 135°$, $d = 46.8$ m, $e = 21.5$ m

b) $\angle A = 62°$, $\angle B = 60°$, $\angle C = 58°$

12. **a)** no solution **b)** two; 7.1 m or 15.1 m

13. 267 m

14. **a)** Cori: 221 m; Jane: 230 m

b) Cori was closer by 1 m.

15. 7.4 cm

BLM 1–6 Chapter 1 Case Study

1. Example: good hearing, good vision, good speaking skills

2. Example: teamwork, calm under pressure, good short-term memory, quick with computational numeric skills, follows rules but is flexible

3. **a)** The distance is 13.4 km, which is greater than the 9-km minimum.

b) No. Within 1 min these planes will be less than 9 km apart.

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