Chapter 3 BLM Answers

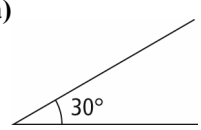
BLM 3–2 Chapter 3 Prerequisite Skills

1. ∠3

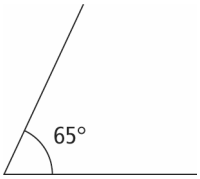
2. Example: ∠1 = 60°, ∠2 = 75°, ∠3 = 105°, ∠4 = 50°, ∠5 = 120°

3. Example:

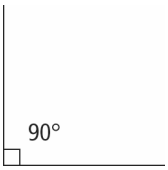
a)



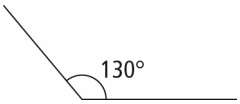
b)



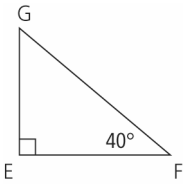
c)



d)



4.



5. a) side *f* **b)** 40° **c)** side *f* **d)** ∠EFD or ∠DFE

6. The triangle could be sketched in two ways. The shortest side, PQ, is opposite the smallest angle. As a result, the 30° angle is labelled R in both sketches. However, side PQ could be labelled with either the P or the Q at the right angle.

7. a) $x^2 = 6^2 + 9^2$ **b)** $x^2 = 9^2 - 7^2$ or $9^2 = x^2 + 7^2$

c) $y^2 = 5^2 - 2^2$ or $5^2 = y^2 + 2^2$

8. a) $x = 5$ **b)** $x = 5$ **c)** $x = 12$

9. Sets can be arranged in several ways. Possible explanations include

- arranged by shape (circles, rectangles, and triangles)
- arranged by size (small and large)
- arranged by orientation (horizontal/vertical and rotated)
- arranged as "similar figures" mathematically (two circles, two right triangles, two equilateral triangles, or the two rectangles where the length is slightly more than twice the width)

10. a) $\frac{AB}{DE} = \frac{AC}{DF} = \frac{BC}{EF}$ and ∠A = ∠D, ∠B = ∠E, and ∠C = ∠F

b) AB : DE, AC : DF, and BC : EF **c)** x = AC

11. a) 14 **b)** 5

BLM 3–3 Chapter 3 Warm-Up

Section 3.1

1. a) 9.8 **b)** 7.9 **c)** 6.6

2. a) ∠E = 40° **b)** ∠F = 67° **c)** ∠C = 45°

3. a) AE **b)** HF **c)** JC **4.** D

5. a) 15 **b)** 9 **c)** 18.75

Section 3.2

1. a) 0.933 **b)** 3.078 **c)** 1.732

2. a) 14° **b)** 69° **c)** 22°

3. a) 11.2 **b)** 12.9 **c)** 52.0 **d)** 17.3

4. a) AD **b)** BH **c)** JG

5. a) 5.8 **b)** 4.2

Section 3.3

1. a) 0.682 **b)** 0.731 **c)** 0.933

2. a) 22° **b)** 68° **c)** 21°

3. a) 8.2 **b)** 12.6

4. a) DE **b)** BF **c)** CG

5. a) 18° **b)** 7.7

BLM 3–5 Section 3.1 Extra Practice

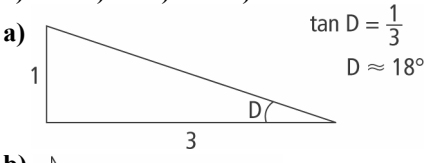
1. a) 10 = hypotenuse, 8 = opposite, 6 = adjacent

b) c = hypotenuse, a = opposite, b = adjacent

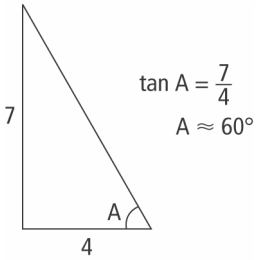
2. a) 0.5774 **b)** 0.2126 **c)** 1.1106 **d)** 5.6713

3. a) 31° **b)** 9° **c)** 57° **d)** 84°

4. a)



b)



5. a) 4.5 cm **b)** 7.9 cm **6. a)** 36° **b)** 58°

7. 9.3 m **8.** 49°

BLM 3–7 Section 3.2 Extra Practice

1. a) $\frac{12}{13}$ **b)** $\frac{5}{13}$ **c)** $\frac{5}{13}$ **d)** $\frac{12}{13}$

2. a) 0.5736 **b)** 0.9781 **c)** 0.9781 **d)** 0.0872

3. a) 53° **b)** 81° **c)** 27° **d)** 47°

4. a) 6.1 **b)** 5.8 **c)** 16.4 **d)** 4.4 m

5. a) 34° **b)** 60° **c)** 41° **d)** 26°

6. 80.3 m **7.** 17°

BLM 3–8 Section 3.3 Extra Practice

1. a) $\angle C = 28.7°$, $\angle A = 61.3°$, $b = 8.5$

b) $\angle D = 58°$, $e = 4.8$, $d = 7.6$

c) $\angle I = 20°$, $h = 22.9$, $i = 7.8$

d) $\angle K = 44.9°$, $\angle J = 45.1°$, $k = 8.5$

2. a) 76° **b)** 2.2 cm

3. a) 60.2 m **b)** 28° **c)** Yes, he can, because the distance to the nest is only 68.2 m.

4. 61°

BLM 3–9 Chapter 3 Test

1. B **2.** A **3.** B **4.** C

5. a) 0.7986 **b)** 0.8829 **c)** 0.5774

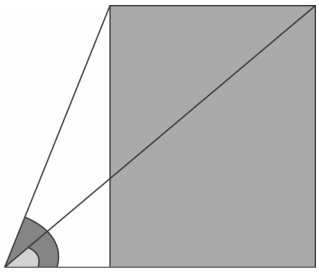
6. a) 35° **b)** 22° **c)** 60°

7. 1 **8.** 19.5° **9.** 69° **10.** 22 ft

11. $\theta = 25°$, $x = 18.6$ cm, $y = 39.9$ cm

12. a) $CD = 150 \sin 46°$ **b)** 107.9 m **c)** 128.6 m

13. a) left side Example: The light grey angle represents the angle of elevation from Nicole to the right side of the building (40°), and the dark grey angle represents the angle of elevation from Nicole to the left side of the building (68°). From the diagram, Nicole must be on the left side of the building.



b) 9.9 m