

Math Challenge I-A: Geometry

Answer Key

Areteem Institute

Chapter 1. Counting Through Patterns

Quick Reponse Questions:

1.11: 7

1.16: C

1.12: 3

1.17: 5

1.13: B

1.18: 13

1.14: D

1.19: 100

1.15: B

1.20: 30

Practice Questions:

1.21: 10.

1.26: 7.

1.22: 54° .

1.27: 35.

1.23(a): 44

1.28: 22.

1.23(b): 63

1.29: 379.08cm^2 .

1.24: 30.

1.30: 20cm.

1.25: 14.

Chapter 2. Measurements

Quick Reponse Questions:

2.11: 14

2.16: 2

2.12: 5

2.17: 24

2.13: 12

2.18: 25

2.14: 20

2.19: 21

2.15: 16

2.20: 45

Practice Questions:

2.21: 49

2.26: 20.

2.22: 24in^2 .

2.27: 6 cm^2 .

2.23: 20 in and 15 in.

2.28: 32.

2.24: 143 cm^2 .

2.29: 6 and 2.

2.25: 44 cm.

2.30: 3600.

Chapter 3. Dance with Angles

Quick Reponse Questions:

3.11: B

3.16: A

3.12: A

3.17: D

3.13: C

3.18: C

3.14: B

3.19: 42

3.15: D

3.20: 132

Practice Questions:

3.21: 105°

3.26: 20°

3.22: 50° .

3.27: 144°

3.23: 45° .

3.28: 72°

3.24: 105°

3.29: 55°

3.25: 115° .

3.30: 50°

Chapter 4. Magic in Triangles

Quick Reponse Questions:

4.11: Yes

4.16: Yes

4.12: No

4.17: No

4.13: Yes

4.18: 120

4.14: No

4.19: 80

4.15: Yes

4.20: Yes

Practice Questions:

4.21: Omitted

4.28: Omitted

4.22: Omitted

4.29: Omitted

4.23: 70° .

4.30(a): $\angle A = \angle B = \angle C = 60^\circ$

4.24: Omitted

4.30(b): $\angle A = \angle B = 70^\circ$

4.25: 1.

4.30(c): $\angle B = 50^\circ, b = 10$

4.26: Omitted

4.30(d): $\angle C = 70^\circ, c = 10$

4.27: 115° .

Chapter 5. You are Special, Right?

Quick Reponse Questions:

5.11: 29

5.16: 240

5.12: 4.24

5.17: 4.5

5.13: 6

5.18: No

5.14: 1

5.19: 30

5.15: 24

5.20: B

Practice Questions:

5.21: Omitted

5.25(a): Altitude: $2\sqrt{2}$ cm

5.22(a): No.

5.25(b): $3\sqrt{2}$ cm

5.22(b): Yes.

5.25(c): 2 in.

5.22(c): Yes.

5.26: 75° .

5.22(d): No.

5.27: True.

5.22(e): Yes.

5.28: Yes

5.23: 36.

5.29: $12\sqrt{3} - 18$.

5.24: No.

5.30: 70°

Chapter 6. Angles are Special Too

Quick Reponse Questions:

6.11: Yes

6.16: 3240

6.12: Yes

6.17: 360

6.13: No

6.18: 360

6.14: No

6.19: 80

6.15: 140

6.20: 130

Practice Questions:

6.21: $\frac{1}{3}$

6.26: $43\sqrt{3}/4$.

6.22: No.

6.27(a): $288 + 288\sqrt{2}$.

6.23: 14.

6.27(b): 10.

6.24: $82.5^\circ, 37.5^\circ$

6.28: Yes.

6.25: Yes.

6.29: Omitted

6.30: $2 - \sqrt{2}$.

Chapter 7. Area of Polygons

Quick Reponse Questions:

7.11: 9

7.16: 49

7.12: 23.4

7.17: 32

7.13: 43.5

7.18: 48

7.14: 8

7.19: 48

7.15: 15

7.20: 125

Practice Questions:

7.21(a): 20.

7.26: 36.

7.21(b): Smallest is 18.

7.27: $[ABCD]/3$.

7.22: 75.

7.28: 3 : 8.

7.23: 1 : 3.

7.29: 1 : 1.

7.24: 1 : 2.

7.30: 27.

7.25: $\triangle AFC$, $\triangle ADF$, $\triangle ABE$

Chapter 8. Cool Areas

Quick Reponse Questions:

8.11: 11

8.16: 7

8.12: 10

8.17: 6

8.13: 12

8.18: 18

8.14: 48

8.19: 17

8.15: 6

8.20: 51

Practice Questions:

8.21(a): 75

8.25: 2

8.21(b): 32

8.26: 15

8.21(c): 32

8.27: 3

8.21(d): 14

8.28(a): 18.

8.22: 24

8.28(b): 18

8.23: $25/2$

8.29: 5

8.24: 12

8.30: 18

Chapter 9. Circle Around

Quick Reponse Questions:

9.11: 78.5

9.16: No

9.12: 31.4

9.17: No

9.13: No

9.18: 21.8

9.14: 25.1

9.19: 13.76

9.15: 201

9.20: 25.1

Practice Questions:

9.21: 16.

9.26: 4.

9.22(a): 2π

9.27: $50\pi - 100$.

9.22(b): $2\pi - 4$

9.28: 2.

9.23(a): $25\pi - 50$

9.29: 20π .

9.23(b): $125\pi/4 - 50$

9.30(a): $4 + 2\sqrt{2} + 2\pi$

9.24: 24

9.30(b): $\pi + 2\sqrt{2} + 2$

9.25: ≈ 21