

## Chapter 10 – Geometry and Measurement

## Answer Key

### 10.1 Area of a Parallelogram

#### Answers

- |                  |                   |                |                 |                    |
|------------------|-------------------|----------------|-----------------|--------------------|
| 1. 20 sq. in     | 2. 16 sq. cm      | 3. 36 sq. in   | 4. 50 sq. ft.   | 5. 42 sq. in.      |
| 6. 80 sq. m.     | 7. 99 sq. ft.     | 8. 120 sq. m   | 9. 22.5 sq. in. | 10. 21.25 sq. ft.  |
| 11. 28.5 sq. ft. | 12. 22.75 sq. ft. | 13. 19 sq. cm. | 14. 180 sq. ft. | 15. 3000 sq. miles |

### 10.2 Unknown Dimensions of Parallelograms

#### Answers

- |             |             |             |             |              |
|-------------|-------------|-------------|-------------|--------------|
| 1. 2"       | 2. 5 miles  | 3. 6 inches | 4. 2 meters | 5. 15 feet   |
| 6. 11 feet  | 7. 11 feet  | 8. 8 miles  | 9. 3 meters | 10. 4 feet   |
| 11. 10 feet | 12. 12 feet | 13. 10 feet | 14. 2 feet  | 15. 3.6 feet |

### 10.3 Triangle Area

#### Answers

- |                |                |                 |                   |                   |
|----------------|----------------|-----------------|-------------------|-------------------|
| 1. 20 sq. in.  | 2. 80 sq. m.   | 3. 26 sq. in.   | 4. 35 sq. cm.     | 5. 21.25 sq. ft.  |
| 6. 10 sq. in.  | 7. 12 sq. in.  | 8. 28 sq. ft.   | 9. 40 sq. m.      | 10. 25 sq. m.     |
| 11. 84 sq. ft. | 12. 33 sq. ft. | 13. 56 sq. in.  | 14. 209 sq. ft.   | 15. 420 sq. cm    |
| 16. 144 sq. in | 17. 65 sq. m.  | 18. 49.5 sq. m. | 19. 15.63 sq. ft. | 20. 10.31 sq. in. |

### 10.4 Unknown Dimensions of Triangles

#### Answers

- |               |               |              |              |              |
|---------------|---------------|--------------|--------------|--------------|
| 1. 3 inches   | 2. 4 inches   | 3. 6 feet    | 4. 4 meters  | 5. 10 inches |
| 6. 12 feet    | 7. 12 cm      | 8. 10 meters | 9. 15 meters | 10. 6 meters |
| 11. 36 meters | 12. 12 meters | 13. 4 meters | 14. 6 meters | 15. 4 meters |

**10.5 Pi****Answers**

- |             |             |              |              |              |              |
|-------------|-------------|--------------|--------------|--------------|--------------|
| 1. 8 in.    | 2. 12 in.   | 3. 10 in.    | 4. 24 in.    | 5. 32 ft.    | 6. 56 mm     |
| 7. 25 ft.   | 8. 2.5 m    | 9. 6 m       | 10. 9 m      | 11. 6.25 in. | 12. 9.25 ft. |
| 13. 4.9 in. | 14. .725 mm | 15. .875 ft. | 16. 1.25 ft. | 17. 110.63 m |              |

**10.6 Circle Circumference****Answers**

- |              |               |               |               |              |
|--------------|---------------|---------------|---------------|--------------|
| 1. 15.7 in   | 2. 25.12 in   | 3. 28.26 cm   | 4. 9.42 cm    | 5. 31.4 ft.  |
| 6. 47.1 ft.  | 7. 34.54 m    | 8. 40.82 ft.  | 9. 53.38 ft.  | 10. 62.8 in  |
| 11. 15.7 in. | 12. 25.12 in. | 13. 28.26 cm  | 14. 9.42 cm   | 15. 31.4 ft. |
| 16. 47.1 ft. | 17. 34.54 m   | 18. 40.82 ft. | 19. 53.38 ft. | 20. 62.8 in  |

**10.7 Diameter or Radius of a Circle Given Circumference****Answers**

- |            |          |            |              |
|------------|----------|------------|--------------|
| 1. 12 in   | 2. 13 in | 3. 6 in    | 4. 9 ft.     |
| 5. 18 m    | 6. 5.5 m | 7. 6.2 ft. | 8. 9.8 ft    |
| 9. 4.01 in | 10. 6 in | 11. 2 in   | 12. 2.5 ft.  |
| 13. 1.25 m | 14. 8 m  | 15. 3.5 m  | 16. 2.25 ft. |

**10.8 Area of a Circle****Answers**

- |                           |                           |                            |                            |                             |
|---------------------------|---------------------------|----------------------------|----------------------------|-----------------------------|
| 1. 50.24 in <sup>2</sup>  | 2. 78.5 cm <sup>2</sup>   | 3. 200.96 in <sup>2</sup>  | 4. 12.56 cm <sup>2</sup>   | 5. 153.86 m <sup>2</sup>    |
| 6. 254.34 in <sup>2</sup> | 7. 314 ft <sup>2</sup>    | 8. 379.94 cm <sup>2</sup>  | 9. 1256 ft <sup>2</sup>    | 10. 2826 miles <sup>2</sup> |
| 11. 78.5 in <sup>2</sup>  | 12. 113.04 m <sup>2</sup> | 13. 153.86 cm <sup>2</sup> | 14. 200.96 ft <sup>2</sup> | 15. 254.34 in <sup>2</sup>  |

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16.  $379.94 \text{ ft}^2$

17.  $452.16 \text{ cm}^2$

18.  $615.44 \text{ m}^2$

19.  $706.5 \text{ m}^2$

## *Answer Key*

20.  $1017.36 \text{ ft}^2$

**10.9 Radius or Diameter of a Circle Given Area****Answers**

- |            |            |            |            |            |
|------------|------------|------------|------------|------------|
| 1. 2 cm    | 2. 3 m     | 3. 4 cm    | 4. 5 ft.   | 5. 7 m     |
| 6. 8 in    | 7. 9 ft.   | 8. 6 miles | 9. 12 m    | 10. 14 cm  |
| 11. 16 in. | 12. 18 ft. | 13. 20 ft. | 14. 21 ft. | 15. 25 ft. |

**10.10 Areas of Combined Figures Involving Circles****Answers**

- |                                   |                          |                          |
|-----------------------------------|--------------------------|--------------------------|
| 1. Rectangle and Half of a circle | 2. 40 sq. in.            | 3. 78.5 sq. in.          |
| 4. 39.25 sq. in                   | 5. 79.25 sq. in.         | 6. 4.5 m                 |
| 7. 9 m                            | 8. 28.26 m               | 9. 63.59 m <sup>2</sup>  |
| 10. 31.79 m <sup>2</sup>          | 11. 30 ft.               | 12. 60 ft.               |
| 13. 188.4 ft                      | 14. 2826 ft <sup>2</sup> | 15. 1413 ft <sup>2</sup> |

**10.11 Circle Graphs to Display Data****Answers**

- |              |               |         |              |
|--------------|---------------|---------|--------------|
| 1. baseball  | 2. Ice hockey | 3. 15%  | 4. 60 people |
| 5. 27 people | 6. 47%        | 7. 70%  | 8. 92%       |
| 9. 27%       | 10. 70%       | 11. 90% | 12. 85%      |
- 13 – 15 Answers Vary

**10.12 Classification of Solid Figures****Answers**

- |                      |                      |             |
|----------------------|----------------------|-------------|
| 1. Rectangular Prism | 2. Sphere            | 3. Cone     |
| 4. Pyramid           | 5. Rectangular prism | 6. sphere   |
| 7. Pyramid           | 8. Hexagonal prism   | 9. Cylinder |

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## *Answer Key*

10. Triangular prism

11. Cube

12. Pentagonal

13. Hexagonal

14. Triangular

15. cone

**10.13 Faces, Edges and Vertices of Solids**

**Answers**

1. Vertex      2. Edge      3. Face
4. The plane figure that creates a three dimensional solid.
5. The place where two faces meet in a solid figure.
6. A point on a solid figure
7. 12            8. Triangle and square            9. Rectangles
10. 1            11. Rectangular Prism            12. Hexagonal Prism
13. Cone        14. Cylinder                          15. Triangular Pyramid

**10.14 Surface Area of Prisms**

**Answers**

1.  $340 \text{ in}^2$                           2.  $352 \text{ in}^2$                           3.  $288 \text{ m}^2$
4.  $344 \text{ in}^2$                           5.  $392 \text{ m}^2$                           6.  $318 \text{ ft}^2$
7.  $232 \text{ m}^2$                           8.  $126 \text{ ft}^2$                           9. cm
10. 15 cm                              11. 4 cm                                  12. 5 cm
13. 3 cm                                14. Area of 3 rectangles + area of two triangles                          15.  $222 \text{ cm}^2$

**10.15 Volume of Prisms Using Unit Cubes**

**Answers**

1.  $125 \text{ m}^3$                           2.  $96 \text{ in}^3$                           3.  $48 \text{ m}^3$                           4.  $120 \text{ cm}^3$                           5.  $55 \text{ in}^3$
6.  $648 \text{ mm}^3$                           7.  $135 \text{ ft}^3$                           8.  $120 \text{ in}^3$                           9.  $480 \text{ cm}^3$                           10.  $512 \text{ m}^3$
11. Triangular Prism            12. Rectangular Prism            13. Cube                                  14. Rectangular Prism

**10.16 Volume of Prisms**

**Answers**

- |                       |                          |                       |                       |                        |
|-----------------------|--------------------------|-----------------------|-----------------------|------------------------|
| 1. $60 \text{ in}^3$  | 2. $210 \text{ m}^3$     | 3. $288 \text{ cm}^3$ | 4. $384 \text{ cm}^3$ | 5. $300 \text{ ft}^3$  |
| 6. $792 \text{ m}^3$  | 7. $82.5 \text{ in}^3$   | 8. $231 \text{ cm}^3$ | 9. $168 \text{ ft}^3$ | 10. $1200 \text{ m}^3$ |
| 11. $60 \text{ in}^3$ | 12. $157.5 \text{ in}^3$ | 13. $360 \text{ m}^3$ | 14. $780 \text{ m}^3$ | 15. $216 \text{ cm}^3$ |
| 16. True              | 17. False                | 18. True              | 19. True              | 20. True               |

**10.17 Surface Area of Cylinders**

**Answers**

- |              |                                 |              |
|--------------|---------------------------------|--------------|
| 1. 150.72 in | 2. Error – no image on web page | 3. 200.96 in |
| 4. 791.28 m  | 5. 131.88 ft                    | 6. 301.44 in |
| 7. 628 in    | 8. 1205.76 m                    | 9. 2141.48 m |
| 10. 252.77 m | 11. 100.48 ft                   | 12. 628 ft   |
| 13. 2198 cm  | 14. 1865.16 in                  | 15. 3454 ft  |

**10.18 Volume of Cylinders**

**Answers**

- |                           |                            |                           |
|---------------------------|----------------------------|---------------------------|
| 1. $628 \text{ in}^3$     | 2. $351.68 \text{ in}^3$   | 3. $141.3 \text{ ft}^3$   |
| 4. $226.08 \text{ ft}^3$  | 5. $452.16 \text{ cm}^3$   | 6. $226.08 \text{ in}^3$  |
| 7. $706.5 \text{ m}^3$    | 8. $125.6 \text{ in}^3$    | 9. $791.28 \text{ cm}^3$  |
| 10. $310.86 \text{ ft}^3$ | 11. $1607.68 \text{ in}^3$ | 12. $150.72 \text{ mm}^3$ |
| 13. $678.24 \text{ in}^3$ | 14. $863.5 \text{ cm}^3$   | 15. $3140 \text{ ft}^3$   |