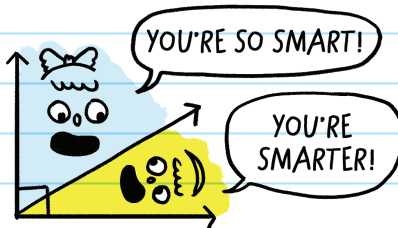


CONTENTS

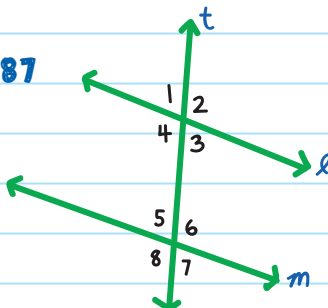
UNIT 1: BASICS OF GEOMETRY 1

1. Points, Lines, and Planes 2
2. Angles 17
3. Angle Pairs 27
4. Constructions 41
5. Logic and Reasoning 53
6. Geometric Proofs 69



UNIT 2: PARALLEL LINES 87

7. Parallel Lines and Transversals 88
8. Proving Special Angle Pairs 99
9. Proving Lines Parallel 109



UNIT 3:

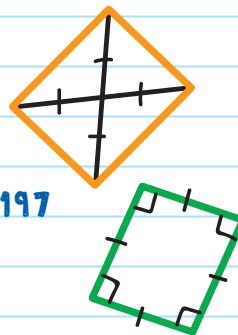
TRIANGLES AND CONGRUENCE 119

10. Types of Triangles 120
11. Interior and Exterior Angles 129
12. Side-Side-Side and Side-Angle-Side Congruence 139
13. Angle-Side-Angle and Angle-Angle-Side Congruence 153
14. Triangle Bisectors 163
15. Triangle Inequalities 177



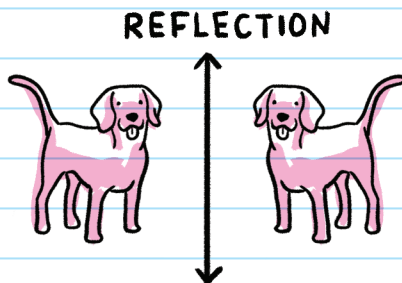
UNIT 4: QUADRILATERALS AND POLYGONS 185

16. Parallelograms 186
17. Rhombuses, Rectangles, and Squares 197
18. Trapezoids and Kites 209
19. Angle Measures in Polygons 219



UNIT 5:
**GEOMETRIC
TRANSFORMATIONS** 229

- 20. Reflections 230
- 21. Translations 243
- 22. Rotations 251
- 23. Compositions 265
- 24. Congruence 279



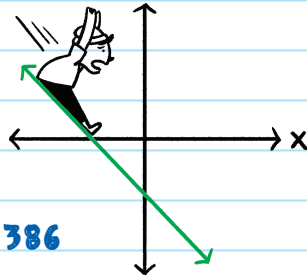
UNIT 6:
SIMILARITY 285

- 25. Ratio and Proportion 286
- 26. Dilations 295
- 27. Similar Figures 310
- 28. Similar Triangles 319
- 29. Proportions in Triangles 329



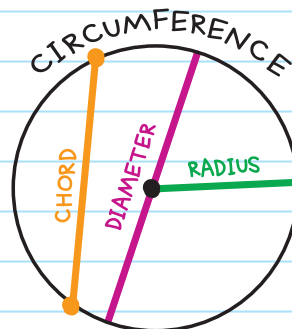
UNIT 7:
**RIGHT TRIANGLES
AND TRIGONOMETRY 339**

- 30. Slope and Linear Equations **340**
- 31. The Pythagorean Theorem **355**
- 32. Midpoint and Distance
Formulas **363**
- 33. Coordinate Triangle
Proofs **373**
- 34. Coordinate Quadrilateral Proofs **386**
- 35. Trigonometric Ratios **400**
- 36. Laws of Sines and Cosines **409**



UNIT 8:
CIRCLES 417

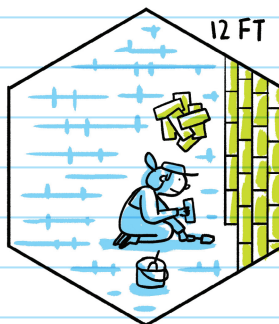
- 37. Circle Fundamentals **418**
- 38. Central Angles and Arcs **430**
- 39. Radians **442**
- 40. Arcs and Chords **447**
- 41. Inscribed Angles **455**
- 42. Tangents **463**
- 43. Secants **471**
- 44. Equations of Circles **477**



UNIT 9:

AREA 489

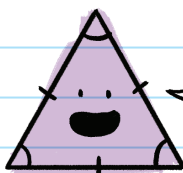
- 45. Areas of Parallelograms and Triangles 490
- 46. Areas of Other Polygons 499
- 47. Areas of Circles and Sectors 511
- 48. Areas of Composite Figures 519



UNIT 10:

SURFACE AREA AND VOLUME 531

- 49. Surface Areas of Prisms and Cylinders 532
- 50. Surface Areas of Pyramids and Cones 545
- 51. Volumes of Prisms and Cylinders 557
- 52. Volumes of Pyramids and Cones 569
- 53. Surface Area and Volume of Spheres 579
- 54. Volumes of Composite Figures 589
- 55. Solids of Revolution 599



PERFECT, LET'S
GET STARTED.