

Geometry Practice Answers // Mr. Fitch

p356 #7-10, 12, 13, 15, 16, 18, 19, 22-24, 26, 34, 35, 46

7. 900
8. 5940
9. 2160
10. 3240
12. 135
13. 150
15. 60, 120, 120, 60
16. 10^3
18. 72
19. 10
22. 3
23. 8
24. 13

5 points each

26. Answers may vary. Sample:



34. 162; 20
35. 150; 12
46. 24

p363 #6, 7, 11-12, 14, 25, 27-30, 39, 40, 45-48

6. Answers may vary. Sample:
The angle opposite the given angle is congruent to it. The other two angles and the given angle are consecutive angles, so they are supplements of the given angle.
7. A quadrilateral and a \square both have four sides, but if both pairs of opposite sides are \parallel , then the figure is a \square .
11. 100
12. 118
14. $x = 6, y = 8$
25. 20
27. $y = 4, x = 12$
28. $y = 45, x = 15$

5 points each

29. 22
30. 6
39. $m\angle 1 = 71, m\angle 2 = 28, m\angle 3 = 81$
40. $m\angle 1 = 95, m\angle 2 = 37, m\angle 3 = 37$
45. D
46. G
47. C

48. Answers may vary. Sample:
A hexagon has 6 sides; by the Polygon Exterior Angle-Sum Theorem, the measure of the exterior angle of a regular hexagon is $\frac{360}{6} = 60$.

p372 #6, 8, 9, 13-15, 22, 23, 29

10 points each

6. It is a \square only if the same pair of opp. sides are \cong and parallel.
8. $x = 2, y = 6$
9. $x = 21, y = 39$
13. Yes; both pairs of opposite sides are \cong .
14. No; only one diagonal is bisected.
15. Yes; both pairs of opposite angles are \cong .
22. $x = 15, y = 25$
23. $y = 11, x = 3$
29. D

p379 #5, 6, 11-13, 22, 24-38, 42, 43, 55, 57**4 points each**

5. Rectangles and squares are equiangular. Rhombuses and squares are equilateral.
6. The first step should be $(2x + 8) + (9x - 6) = 90$.
11. $m\angle 1 = 118$, $m\angle 2 = m\angle 3 = 31$
12. $m\angle 1 = m\angle 2 = 33.5$, $m\angle 3 = 113$, $m\angle 4 = 33.5$.
13. $m\angle 1 = 32$, $m\angle 2 = 90$, $m\angle 3 = 58$, $m\angle 4 = 32$
22. $x = \frac{5}{3}$; $LN = MP = \frac{29}{3}$.
24. rhombus
25. \square
26. rhombus
27. rectangle
28. rhombus, square
29. \square , rhombus, rectangle, square
30. \square , rhombus, rectangle, square

31. \square , rhombus, rectangle, square
32. rectangle, square
33. \square , rhombus, rectangle, square
34. \square , rhombus, rectangle, square
35. rectangle, square
36. rhombus, square
37. rhombus, square
38. $x = 3$, $y = 5$; all sides are 15
42. 30
43. $x = 5$, $y = 32$, $z = 7.5$
55. D
57. A

p386 #5-14, 32-35**7 points each**

- 5a. rhombus, square
- 5b. rectangle, square
- 5c. rhombus, square
- 5d. rectangle, rhombus, square
- 5e. rhombus, square
6. The only parallelograms with \perp diagonals are rhombuses and squares.
7. Since the two diameters of the circle are \cong and are the diagonals of the quadrilateral, the quadrilateral is a rectangle by Theorem 6-18.
8. Rhombus; one diagonal bisects the angles.
9. Rhombus; diagonals are \perp .
10. No; you only know that the diagonals bisect each other, which is true for all parallelograms.

11. 12
12. 1
13. 10
14. Answers may vary. Sample:
Measure opposite sides; if they are \cong , then it is a \square . Then measure the diagonals; if they are \cong , then the bookshelf is rectangle.
32. B
33. I
34. B
35. $\left(\frac{-7+x}{2}, \frac{10+y}{2}\right) = (-1, 4)$. $-7+x = -2$, $x-5$, and $10+y = 8$, $y = -2$, so $Q(5, -2)$.

p393 #4-8, 13, 14, 16, 18, 19, 29, 47-52, 57-62 [25, 26]**4 points each**

4. No; a kite's opposite sides are neither \parallel nor \cong .
5. Answers may vary. Sample:
A kite and a rhombus are similar because their diagonals are \perp and consecutive sides are \cong . They are different because one diagonal of a kite bisects opposite angles but the other diagonal does not. They are also different because all sides of a rhombus are \cong .
6. The definition of a trapezoid is a quadrilateral with exactly one pair of \parallel sides. A \square has two pairs of \parallel sides, so a \square is not a trapezoid.
7. $m\angle 1 = 77$, $m\angle 2 = 103$, $m\angle 3 = 103$.
8. $m\angle 1 = 69$, $m\angle 2 = 69$, $m\angle 3 = 111$
13. 9
14. 11
16. $m\angle 1 = 90$, $m\angle 2 = 68$.
18. $m\angle 1 = 108$, $m\angle 2 = 108$.

47. Isosceles trapezoid; answers may vary. Sample:



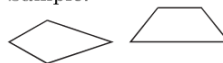
- 48.
- \square
- , rhombus, square, rectangle; answers may vary. Sample:



49. Square, rectangle; answers may vary. Sample:



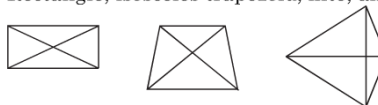
50. Kite, isosceles trapezoid, rhombus, square; answers may vary. Sample:



51. Kite, rhombus, square; answers may vary. Sample:



52. Rectangle, isosceles trapezoid, kite; answers may vary. Sample:



57. True; a square is a
- \square
- with 4 right angles (definition of rectangle).

58. False; a trapezoid has exactly one pair of
- \parallel
- sides.

59. False; a rhombus has 4
- \cong
- sides, and a kite does not.

60. True; a square is a
- \square
- that has 4
- \cong
- sides and 4 right angles.

61. False; counterexample: kites and trapezoids are not parallelograms.

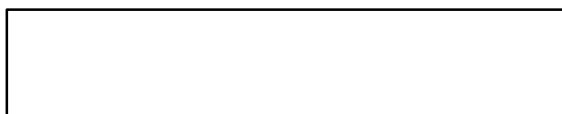
62. False; a rhombus without 4 right angles is not a square.

p403 #2, 3, 7, 9, 10, 14, 15, 31, 45-47 [32]**9 points each**

2. No; explanations may vary. Sample:
The diagonal lengths ($\sqrt{29}$ and 5) are not equal.
3. Find the coordinates and use the Distance Formula to compare lengths.
7. Isosceles; side lengths are $2\sqrt{2}$, $\sqrt{34}$, and $\sqrt{34}$.
9. Rhombus; explanations may vary. Sample:
Since the diagonals are not \cong , $LMNP$ is a rhombus.
10. Rectangle; explanations may vary. Sample:
Consecutive sides are \perp and not \cong .
14. \square

15. rhombus

- Yes; $PR = SW = 4$, $PQ = ST = \sqrt{10}$,
31. $QR = TW = 3\sqrt{2}$, so $\triangle PQR \cong \triangle STW$ by SSS.



45. D

46. G

47. A

7. $S(0, h), T(b, h), W(b, 0).$

8. $S(0, a), T(a, a), W(a, 0).$

38. C

9. $S\left(-\frac{b}{2}, -\frac{b}{2}\right), T\left(-\frac{b}{2}, \frac{b}{2}\right), W\left(\frac{b}{2}, \frac{b}{2}\right), Z\left(\frac{b}{2}, -\frac{b}{2}\right)$ 40. C

11. Since the rhombus $STWZ$ is centered at the origin, the diagonals lie on the axes, and the diagonals bisect each other, T and Z are t units away from the x -axis, and S and W are r units away from the y -axis. So, $W(r, 0), T(0, t), S(-r, 0),$ and $Z(0, -t).$

16. Since P is the opposite vertex from M in the rectangle $LMNP$ that is centered at the origin, its coordinates have the opposite sign from those of M . So, $P(-r, s).$

Chapter 6 Review on Interactive Achievement

Question #	Answer
1	A
2	F
3	B
4	H
5	C
6	G
7	B
8	F
9	A
10	G
11	A
12	H
13	B
14	G
15	D
16	G
17	A
18	J
19	C
20	F
21	D

F G H J is really A B C D

8-1 Worksheet Simplifying Radicals

3 points each

1. $5\sqrt{5n}$ 2. $6\sqrt{6v}$ 3. $16m\sqrt{2m}$ 4. $6k^2\sqrt{6}$ 5. $10m^2\sqrt{2n}$ 6. $4u^2v\sqrt{v}$ 7. $2xy\sqrt{7xy}$ 8. $28m\sqrt{6m}$

9. $-30\sqrt{6r}$ 10. $4pq\sqrt{2qr}$ 11. $-8ab^2c\sqrt{3a}$ 12. $-\sqrt{5}$ 13. $\sqrt{3}$ 14. $-4\sqrt{2} + \sqrt{5}$ 15. $\sqrt{5}$ 16. $-3\sqrt{3} + 6\sqrt{5}$

17. 4 18. 6 19. $2\sqrt{3}$ 20. $\frac{1}{3}$ 21. $\frac{3\sqrt{3}}{4}$ 22. $\frac{3}{5}$ 23. $\frac{2\sqrt{6}}{5}$ 24. $\frac{\sqrt{2}}{5}$ 25. $\sqrt{2}$ 26. $\frac{3}{\sqrt{5}} = \frac{3}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}}$

$$= \frac{3\sqrt{5}}{\sqrt{5} \cdot \sqrt{5}}$$

$$= \frac{3\sqrt{5}}{5}$$

p444 #1, 2, 4, 5

25 points each

1. $\angle H$

5. In your own words.

2. JT

4. 6