Geometry Practice Answers // Mr. Fitch // 2016-2017

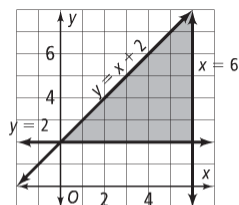**p619 #2, 4, 15, 43**   **25 points each**

2. 64 ft²   4. 36 in.²   15. 13.5 yd²   43. 12,800 m²

p619 #14, 16, 19, 20, 32, 33, 47 [21]; p626 #11, 14, 17, 18, 21, 23, 24, 35; p631 #1, 5, 8-10

14. 14 m²

16. 3 ft²

19. 88 cm²

20. $x = 14$ cm

21. 18 in.; 12 in.

32a.

32b. 24.5 units²

33a.

33b. 18 units²

47. B

11. 472 in.²

14. 150 cm²

17. 30 ft²

18. $52\sqrt{3}$ ft²

5 points each

21. 18 m²

23. 1200 ft²

24. 96 in.²

35. C

1. 100 in.²
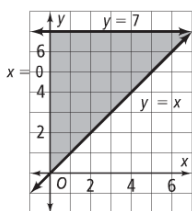
5. A radius is the distance from the center to a vertex, while the apothem is the perpendicular distance from the center to a side.

8. 120, 60, 30

9. 90, 45, 45

10. 60, 30, 60

p632 #11-13, 17, 18, 21-23, 35, 44, 45; p638 #1, 2   **7 points each**

11. 2144.475 cm²

12. 2851.8 ft²

13. $12,080$ in.²

17. 841.8 ft²

18. 27.7 in.²

21. 72 cm²

22. $384\sqrt{3}$ in.²

23. $162\sqrt{3}$ m²

35. In a right triangle, the hypotenuse is the longest side. The apothem is one leg of the right triangle, and the radius is the hypotenuse.

44. B

45. F

1. $4:9$

2. $16:9$

p638 #7, 10-17, 19-21, 36, 39   **6 points each**

7. Answers may vary. Sample:
The ratios of the perimeters and areas of similar figures are not equal (unless the figures are congruent, in which case each ratio is 1).

10. $16:9$

11. $4:9$

12. $9:25$

13. 24 in.²

14. 54 m²

15. The scale factor is $12:16$ or $3:4$. The ratio of their areas will be the scale factor squared, $3^2:4^2$ or $9:16$.
$$\frac{A}{105}=\frac{9}{16}$$
$$16A = 945$$
$$A \approx 59$$
The area is about 59 ft².

16. 309 m²

17. $\$384$

19. $1:2$

20. $5:2$

21. $7:3$

36. $x = 4\,\text{cm}$ and $y = 6\,\text{cm}$

39. $x = 8\,\text{cm}$ and $y = 12\,\text{cm}$

p654 #1-6; p663 #1, 2   **12 points each**

1. $\overset{\frown}{AB}, \overset{\frown}{BD}, \overset{\frown}{AC}, \overset{\frown}{AD},$ and $\overset{\frown}{DC}$

2. $\overset{\frown}{ABD}, \overset{\frown}{ABC}, \overset{\frown}{BDA}, \overset{\frown}{DCB}$ and $\overset{\frown}{CAD}$

3. $\overset{\frown}{BDC}$ and $\overset{\frown}{CAB}$

4. 81

5. 18π cm

6. $\dfrac{23\pi}{4}$ cm

1. 64π in.²

2. 16.875π in.²

p654 #24, 25, 29-31, 50, 60; p663 #10, 16, 17, 34, 37 [35]   **8 points each**

24. 20π cm

25. 6π ft

29. 19 in.

30. $\dfrac{7\pi}{2}$ cm

31. 120; 8π ft

50. The circumference is doubled; explanations may vary.

60. B

10. $\dfrac{\pi}{9}$ in.²

16. 12π in.²

17. 12π ft²

34. about 351.9 in.²

37. about 22.6 mm²

35. $96\sqrt{3} - 16\pi \approx 116$ mm²

p663 #23-26, 31, 39, 40, 52 [47]   **12 points each**

23. about 22.1 cm²

24. about 18.3 ft²

25. about 3.3 m²

26. $\left(243\pi + 162\right)$ ft²

31. $(784 - 196\pi)$ in.²

39. 12 in.

40. Check students' work.

52. G

47. $(200 - 50\pi)\,\text{m}^2$.

p695 #60, 61 p704 #10-12, 14, 17, 23 [26] p721 #6, 7, 10, 11, 14, 23, 38, 46   6 points each

60. 96 cm^2

61. $40\pi \text{ cm}^2$

10a. right hexagonal prism

10b. 240 cm^2

10c. $48\sqrt{3} \text{ cm}^2$, or about 83.1 cm^2

10d. $240 + 48\sqrt{3} \text{ cm}^2$, or about 323.1cm^2

11. 220 ft^2

12. 108 in.^2

14. 82 in.^2

17. $40\pi \text{ cm}^2$

23. 4080 mm^2

26. $220.5\pi + 222 \text{ mm}^2$, or about 914.7 mm^2

6. 216 ft^3

7. 80 in.^3

10. $162\sqrt{3}$, or about 280.6 cm^3

11. 22.5 ft^3

14. $288\pi \text{ in.}^3$, or about 904.8 in.^3

23. 40 cm

38. 98.2 in.^3

46. 604 in.^3

p713 #9, 10, 12, 13, 17-19, 23 p730 #10, 12, 15, 21, 29, 31 [33]   7 points each

9. 408 in.^2

10. 138 m^2

12. 204 m^2

13. 354 cm^2

17. 31 m^2

18. 47 cm^2

19. $144\pi \text{ cm}^2$

23. 4 in.

10. 300 in.^3

12. 363.6 m^3

15. about 66.4 cm^3

21. Volume is halved.

29a. $120\pi \text{ ft}^3$

29b. $60\pi \text{ ft}^3$

29c. $240\pi \text{ ft}^3$

31. $x = 3$

33. Cone; 16π

p736 #1-3   30 points each

1. $144\pi \text{ ft}^2$

2. 904.8 ft^3

3. about 193 cm^2

p654 #24, 25, 29-31, 50, 60; p663 #10, 16, 17, 34, 37 [35]   **8 points each**

24. 20π cm

25. 6π ft

29. 19 in.

30. $\dfrac{7\pi}{2}$ cm

31. 120; 8π ft

50. The circumference is doubled; explanations may vary.

60. B

10. $\dfrac{\pi}{9}$ in.^{2}

16. 12π in.^{2}

17. 12π ft^2

34. about 351.9 in.^{2}

37. about 22.6 mm^2

35. $96\sqrt{3} - 16\pi \approx 116$ mm^2

---

p663 #23-26, 31, 39, 40, 52 [47]   **12 points each**

23. about 22.1 cm^2

24. about 18.3 ft^2

25. about 3.3 m^2

26. $\left(243\pi + 162\right)$ ft^2

31. $(784 - 196\pi)$ in.^{2}

39. 12 in.

40. Check students' work.

52. G

47. $(200 - 50\pi)$ m^2.

---

p695 #60, 61 p704 #10-12, 14, 17, 23 [26] p721 #6, 7, 10, 11, 14, 23, 38, 46   **6 points each**

60. 96 cm^2

61. 40π cm^2

10a. right hexagonal prism

10b. 240 cm^2

10c. $48\sqrt{3}$ cm^2, or about 83.1 cm^2

10d. $240 + 48\sqrt{3}$ cm^2, or about 323.1 cm^2

11. 220 ft^2

12. 108 in.^{2}

14. 82 in.^{2}

17. 40π cm^2

23. 4080 mm^2

26. $220.5\pi + 222$ mm^2, or about 914.7 mm^2

6. 216 ft^3

7. 80 in.^{3}

10. $162\sqrt{3}$, or about 280.6 cm^3

11. 22.5 ft^3

14. 288π in.^{3}, or about 904.8 in.^{3}

23. 40 cm

38. 98.2 in.^{3}

46. 604 in.^{3}

p695 #60, 61; p704 #10-12, 14, 17, 23 [26]; p721 #6, 7, 10, 11, 14, 23, 38, 46   **6 points each**

60. 96 cm²

61. 40π cm²

10a.   hexagonal prism

10b. 240 cm²

10c. $48\sqrt{3}$ cm², or about 83.1 cm²

10d. $240 + 48\sqrt{3}$ cm², or about 323.1cm²

11. 220 ft²

12. 108 in.²

14. 82 in.²

17. 40π cm²

23. 4080 mm²

6. 216 ft³

7. 80 in.³

10. $162\sqrt{3}$, or about 280.6 cm³

11. 22.5 ft³

26. $220.5\pi + 222$ mm², or about 914.7 mm²

14. 288π in.³, or about 904.8 in.³

23. 40 cm

38. 98.2 in.³

46. 604 in.³

---

p713 #9, 10, 12, 13, 17-19; p730 #10, 12, 15, 21 [33]   **9 points each**

9. 408 in.²

10. 138 m²

12. 204 m²

13. 354 cm²

17. 31 m²

18. 47 cm²

19. 144π cm²

10. 300 in.³

12. 363.6 m³

15. about 66.4 cm³

21. Volume is halved.

33. Cone; 16π

---

p713 #23, 27, 28 [37]; p731 #25, 29, 31   **15 points each**

23. 4 in.

27. 471 ft²

28. 45 m²

37. cone with $r = 4$ and $h = 3$; 36π units²

25. 10,368 ft³

29a. 120π ft³

29b. 60π ft³

29c. 240π ft³

31. $x = 3$

---

p746 #11-16, 18, 19, 21, 27, 31 [22]; p736 #1-3   **7 points each**

11. $5 : 6$

12. $6 : 7$

13. $3 : 4$

14. $2 : 5$

15. 240 in.³

16. 180 m³

18. 175 in.²

19. 112 m²

21. 6000 toothpicks

27. about 1000 cm³

31a. $3 : 1$

31b. $9 : 1$

22. about 74 oz of oatmeal

1. 144π ft²

2. 904.8 ft³

3. about 193 cm²

---

p737 #8-10, 17, 18, 23, 30, 32, 60 [29]   **10 points each**

8. 1024π mm²

9. $40{,}000\pi$ yd²

10. 4624π mm²

17. $\dfrac{500}{3}\pi$ ft³, or 524 ft³

18. 288π cm³, or 905 cm³

23. about 451 in.²

30. C

32. the 8 in. sphere

60. B

29. 0.9 in.

p746 #11-16, 18, 19, 21, 27, 31 [22]; p736 #1-3   7 points each

11. $5:6$

12. $6:7$

13. $3:4$

14. $2:5$

15. 240 in.^{3}

16. 180 m^3

18. 175 in.^{2}

19. 112 m^2

21. 6000 toothpicks

27. about 1000 cm^3

31a. $3:1$

31b. $9:1$

22. about 74 oz of oatmeal

1. 144π ft^2

2. 904.8 ft^3

3. about 193 cm^2

p737 #8-10, 17, 18, 23, 30, 32, 60 [29]   10 points each

8. 1024π mm^2

9. $40{,}000\pi$ yd^2

10. 4624π mm^2

17. $\dfrac{500}{3}\pi$ ft^3, or 524 ft^3

18. 288π cm^3, or 905 cm^3

23. about 451 in.^{2}

30. C

32. the 8 in. sphere

60. B

29. 0.9 in.

p766 #1-3   30 points each

1. 32

2. 6

3. about 7.9

p767 #6, 7, 12, 13, 15, 18, 19, 21, 35-38 [27]   8 points each

6. 120

7. 47

12. 4.8

13. 3.6

15. No

18. 78 cm

19. 14.2 cm

21. All four are congruent.

35. about 390 in.^{2}

36. $3:4$

37. $9:16$

38. $27:64$

27. 57.5