Math 3301 Foundations of Geometry
Unit IV Practice Test **Solutions**

1. (a) True (b) True (c) True

2. (a) f = 6, v = 8, e = 12 $6 + 8 - 12 = 2$
   (b) f = 20, v = 12, e = 30 $20 + 12 - 30 = 2$

3. $49.50

4. 191.44 ft^2

5. 6,434.9 cm^3

6. 46.8 ft^3 (approximately)

7. 118,221 cm^2

8. 34,835.6 m^3

9. 127.2 ft^2

10. 18,303,390 in^3

11. SA = 3,676 mm^2 (approximately); V = 16,965 mm^3 (approximately)

12. 305.8 cm^2 (approximately)

13. 3,294.2 m^3 (approximately)

14. SA = 79.4 cm^2 (approximately); V = 58.3 cm^3 (approximately)

15. 78,539.8 cm^3 (approximately)

16. 191.1 ft^2 (approximately)

17. 7.79 cm^3 (approximately)

18. 774,260,589.1 g (approximately)

19. $V_{pyramid} = 53.3\ in^3$ (approximately); $V_{prism} = 160\ in^3$; $V_{pyramid} = {}^1/_3\ V_{prism}$

20. $V_{sphere} = 4{,}189\ cm^3$ (approximately); $V_{cone} = 2{,}094\ cm^3$; $V_{cone} = {}^1/_2\ V_{sphere}$

21. (a) (-5, -1) III (b) (5, 2) I (c) (0, -5) y-axis

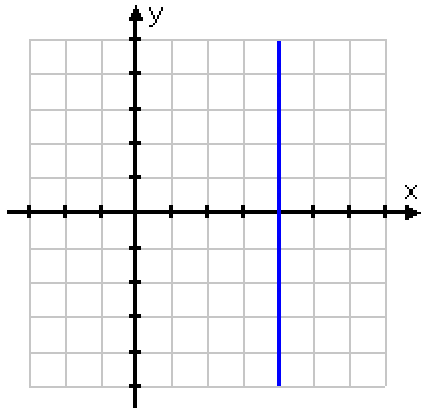
22. $y = {}^{-1}/_4\ x + 6$

23. x-intercept (${}^{-4}/_3$, 0); y-intercept (0, 4)

24. x-axis

25. x-intercept (2, 0); y-intercept (0, 4)

26. x-intercept (4, 0)



27. (a) $^{5}/_{2}$ (b) $^{9}/_{2}$ (c) $^{1}/_{5}$

28. (a) $\sqrt{29}$ (b) $\sqrt{85}$ (c) $\sqrt{26}$

29. 8 or -2

30. (-5, -1)

31. True

32. $^{-1}/_{5}$

33. $y = 3x - 9$

34. A = 48 square units; P = 36 units

35. $4x + y = -1$ or $4x + y + 1 = 0$

36. $y = -5x + 5$

37. (b + a, c)

38. Answers may vary.

Using the general points (0, 0), (0, y), (x, 0), and (x, y), use the distance formula.

Distance from (0, y) to (x, 0) Distance from (0, 0) to (x, y)

$$\sqrt{(x-0)^2+(0-y)^2} = \sqrt{(x-0)^2+(y-0)^2}$$

$$\sqrt{x^2+(-y)^2} = \sqrt{(x)^2+(y)^2}$$

$$\sqrt{x^2+y^2} = \sqrt{x^2+y^2}$$