

Algebra 2 - Semester 2 Final Review (Ch. 5-9)
Answer Section

SHORT ANSWER

1. ANS: 4
Sec. 5.2

2. ANS: 4
Sec. 5.2

3. ANS: $\frac{\sqrt[3]{100}}{5}$
Sec. 5.2

4. ANS: $\frac{48-8\sqrt{7}}{29}$
Sec. 5.2

5. ANS: $13(2^{1/3})$
Sec. 5.2

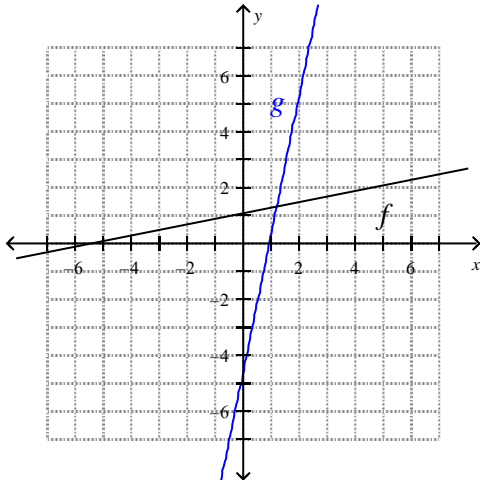
6. ANS: $2r^4s^3t^2\sqrt[6]{rt^5}$
Sec. 5.2

7. ANS: $5\sqrt[4]{n}$
Sec. 5.2

8. ANS: $g(x) = 5\sqrt{x} - 1$
Sec. 5.3

9. ANS: $x = 13$
Sec. 5.4

10. ANS: $g(x) = 5x - 5$

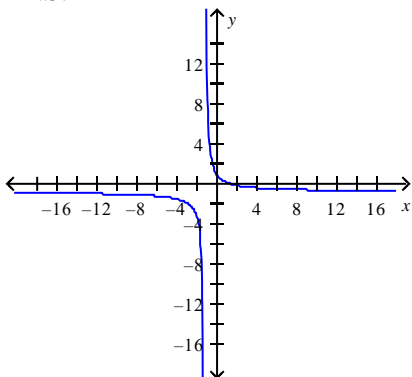


Sec. 5.6

11. ANS: $\frac{36}{e^{10x}}$
Sec. 6.2

12. ANS: $\log_5 \frac{1}{25} = -2$
Sec. 6.3
13. ANS: 14
Sec. 6.3
14. ANS: $y = e^x + 2$
Sec. 6.3
15. ANS: 0.242
Sec. 6.5
16. ANS: $\frac{1}{4} \log_6 7 + \frac{1}{4} \log_6 x$
Sec. 6.5
17. ANS: $\log_7 8$
2 Sec. 6.5
18. ANS: $x = -1$
Sec. 6.6
19. ANS:
 $x = 4$
Sec. 6.6
20. ANS: $\frac{2}{3}, \frac{8}{7}, \frac{3}{2}, \frac{16}{9}, 2, \frac{24}{11}$
Sec. 8.1
21. ANS: arithmetic, $a_5 = -51, a_n = -9n - 6$
Sec. 8.1
22. ANS: -45
Sec. 8.3
23. ANS: $a_n = 2n - 8, a_{13} = 18$
Sec. 8.2
24. ANS: $a_n = 4n + 5$
Sec. 8.2
25. ANS:
 $a_n = 8(-4)^{n-1}, a_6 = -8,192$
Sec. 8.3
26. ANS:
 $a_n = 6(2)^{n-1}$
Sec. 8.3
27. ANS: $\frac{x-8}{x-5}$
Sec. 7.3
28. ANS: $\frac{7x-9}{12x}$
Sec. 7.3

29. ANS:



The domain is all real numbers except -1 , and the range is all real numbers except -1 .

Sec. 7.2

30. ANS: $x+7, x \neq -9, x \neq 2$

Sec. 7.3

31. ANS: $\frac{(x+10)(x-6)}{7x}, x \neq -5$

Sec. 7.3

32. ANS: $\frac{1}{x-4}, x \neq 0, x \neq 7, x \neq 9$

Sec. 7.3

33. ANS: $\frac{x+6}{2(x+5)}, x \neq 4$

Sec. 7.4

34. ANS: $\frac{44}{13x^2+4}$

Sec. 7.4

35. ANS: $x=4$

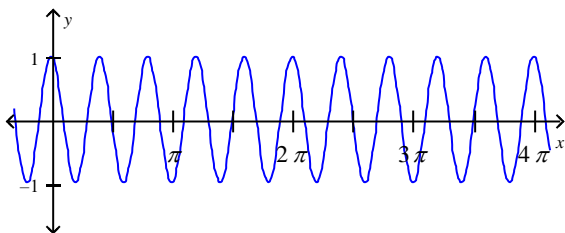
Sec. 7.5

36. ANS:

$x=9, x=-7$

Sec. 7.5

37. ANS: $\frac{2}{5}\pi$



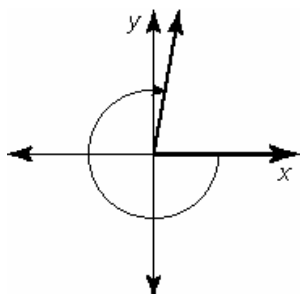
The graph of g is a horizontal shrink by a factor of $\frac{1}{5}$ of the graph of f .

Sec. 9.4

38. ANS: $\cos \theta = \frac{4\sqrt{41}}{41}$, $\sin \theta = \frac{5\sqrt{41}}{41}$

Sec. 9.1

39. ANS:



Sec. 9.2

40. ANS: $\sin \theta = \frac{3}{5}$, $\cos \theta = -\frac{4}{5}$, $\tan \theta = -\frac{3}{4}$

Sec. 9.3

41. ANS: -126°

Sec. 9.2

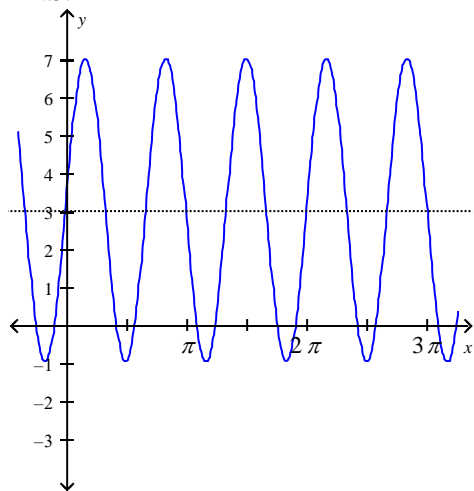
42. ANS: $E = 55^\circ$, $e \approx 38.56$, $f \approx 47.07$

Sec. 9.1

43. ANS: 31°

Sec. 9.3

44. ANS:



Sec. 9.4

45. ANS: $\frac{7\pi}{36}$ rad

Sec. 9.2