Chapter 9 and 10 Test Review **Math 100**

Simplify

1. $10\frac{\sqrt{16}}{\sqrt{25}}$

2. $-2\sqrt{48}$

3. $5\sqrt{80}$

4. $\sqrt{50x^5y^8}$

5. $-5\sqrt{40x^6y^3}$

6. $2\sqrt{27x^5y^5}$

7. $3\sqrt{20}+3\sqrt{5}+\sqrt{45}$

8. $\sqrt{24}-2\sqrt{54}+3\sqrt{18}$

9. $2\sqrt{54}-3\sqrt{24}+3\sqrt{50}$

10. $\left(4\sqrt{15}\right)\left(3\sqrt{10}\right)$

11. $\left(2\sqrt{12}\right)\left(3\sqrt{6}\right)$

12. $\left(\sqrt{14xy}\right)\left(2\sqrt{21y}\right)$

13. $\left(\sqrt{15x^3}\right)\left(2\sqrt{20xy}\right)$

14. $\sqrt{3}\left(\sqrt{6}-3\sqrt{12}\right)$

15. $\sqrt{3}\left(\sqrt{6}-4\sqrt{15}\right)$

16. $3\sqrt{5}\left(\sqrt{10}+2\sqrt{15}\right)$

17. $\left(3\sqrt{5}+2\right)\left(\sqrt{5}-1\right)$

18. $\left(4\sqrt{2}+3\right)\left(3\sqrt{2}-1\right)$

19. $\left(3\sqrt{2}-4\right)^2$

20. $\left(4-\sqrt{5}\right)\left(4+\sqrt{5}\right)$

21. $\left(3+\sqrt{7}\right)\left(3-\sqrt{7}\right)$

22. $\left(3\sqrt{5}+2\right)\left(3\sqrt{5}-2\right)$

23. $\left(\sqrt{14}+3\right)\left(\sqrt{14}-3\right)$

24. $\left(\sqrt{11}+\sqrt{3}\right)\left(\sqrt{11}-\sqrt{3}\right)$

25. $\dfrac{4}{\sqrt{5}}$

26. $\dfrac{4}{\sqrt{6}}$

27. $\dfrac{5}{\sqrt{10}}$

28. $\dfrac{\sqrt{8}}{\sqrt{6}}$

29. $\dfrac{3\sqrt{5}}{\sqrt{6}}$

30. $\dfrac{4\sqrt{2}}{\sqrt{6}}$

31. $\dfrac{3}{3-\sqrt{3}}$

32. $\dfrac{2}{4+\sqrt{6}}$

33. $\dfrac{14}{5-\sqrt{7}}$

34. $\dfrac{\sqrt{5}}{5+\sqrt{3}}$

35. $\dfrac{\sqrt{2}}{\sqrt{5}-\sqrt{2}}$

36. $\dfrac{2}{\sqrt{10}+\sqrt{6}}$

Problems 22 to 23 refer to a right triangle with legs a and b and hypotenuse c.

37. $a = 4\sqrt{3}$ $b = 2$ Find c

38. $a = 3\sqrt{5}$ $c = 7$ Find b

Solve for x.

39. $\sqrt{5x-6}-1=2$

40. $\sqrt{x-7}-2=1$

41. $\sqrt{2x+40}+6=-2$

42. $\sqrt{2x-3}-5=-2$

43. $\sqrt{4x-6}=\sqrt{x+3}$

44. $\sqrt{5x-17}=\sqrt{2x-2}$

Quadratic Equations. Solve for x. You must use the quadratic equation for each problem and show the work. Use NRN or $\varnothing$ if needed.

45. $5x^2+9x-2=0$

46. $3x^2+2x-3=0$

47. $4x^2 - 8x + 1 = 0$

48. $2x^2 + 3x + 4 = 0$

49. $3x^2 - 5x + 1 = 0$

50. $3x^2 + 10x + 4 = 0$

Chapter 9 and 10 Test Review Answers:

1. 8
2. $-8\sqrt{3}$
3. $20\sqrt{5}$
4. $5x^2y^4\sqrt{2x}$
5. $-10x^3y\sqrt{10y}$
6. $6x^2y^2\sqrt{3xy}$
7. $12\sqrt{5}$
8. $-4\sqrt{6}+9\sqrt{2}$
9. $15\sqrt{2}$
10. $60\sqrt{6}$
11. $36\sqrt{2}$
12. $14y\sqrt{6x}$
13. $20x^2\sqrt{3y}$
14. $3\sqrt{2}-18$
15. $3\sqrt{2}-12\sqrt{5}$
16. $15\sqrt{2}+30\sqrt{3}$
17. $13-\sqrt{5}$
18. $21+5\sqrt{2}$
19. $34-24\sqrt{2}$
20. 11
21. 2
22. 41
23. 5
24. 8
25. $\frac{4\sqrt{5}}{5}$
26. $\frac{2\sqrt{6}}{3}$
27. $\frac{\sqrt{10}}{2}$
28. $\frac{2\sqrt{3}}{3}$
29. $\frac{\sqrt{30}}{2}$
30. $\frac{4\sqrt{3}}{3}$
31. $\frac{3+\sqrt{3}}{2}$
32. $\frac{4-\sqrt{6}}{5}$
33. $\frac{7\left(5+\sqrt{7}\right)}{9}=\frac{35+5\sqrt{7}}{9}$
34. $\frac{\sqrt{5}\left(5-\sqrt{3}\right)}{22}=\frac{5\sqrt{5}-\sqrt{15}}{22}$
35. $\frac{\sqrt{2}(\sqrt{5}+\sqrt{2})}{3}=\frac{\sqrt{10}+2}{3}$
36. $\frac{(\sqrt{10}-\sqrt{6})}{2}$
37. $c=2\sqrt{13}$
38. $b=2$
39. x = 3
40. x = 16
41. NRN or $\varnothing$
42. x = 6
43. x = 3
44. x = 5
45. $x=\frac{1}{5}$ or $x=-2$
46. $x=\frac{1\pm 1\sqrt{10}}{3}$
47. $x=\frac{2\pm\sqrt{3}}{2}$
48. NRN or $\varnothing$
49. $x=\frac{5\pm\sqrt{13}}{6}$
50. $x=\frac{-5\pm\sqrt{13}}{3}$