계산시 참고사항

1. 분모의 유리화

(1) 분모의 유리화: 분모가 근호를 포함한 무리수일 때, 분모, 분자에 0이 아닌 같은 수를 곱하여 분모의 근호를 없애고 분모를 유리수로 고치는 것

$a>0,\ b>0$일 때,

① $\dfrac{b}{\sqrt{a}}=\dfrac{b\times\sqrt{a}}{\sqrt{a}\times\sqrt{a}}=\dfrac{b\sqrt{a}}{a}$

② $\dfrac{\sqrt{b}}{\sqrt{a}}=\dfrac{\sqrt{b}\times\sqrt{a}}{\sqrt{a}\times\sqrt{a}}=\dfrac{\sqrt{ab}}{a}$

③ $\dfrac{c}{b\sqrt{a}}=\dfrac{c\times\sqrt{a}}{b\sqrt{a}\times\sqrt{a}}=\dfrac{c\sqrt{a}}{ab}$

$\frac{b}{\sqrt{a}}$꼴의 유리화

◪ 다음 수의 분모를 유리화하여라.

1. $\dfrac{1}{\sqrt{2}}$
2. $\dfrac{1}{\sqrt{3}}$
3. $\dfrac{1}{\sqrt{5}}$
4. $\dfrac{1}{\sqrt{7}}$
5. $\dfrac{1}{\sqrt{10}}$
6. $\dfrac{1}{\sqrt{11}}$
7. $\dfrac{1}{\sqrt{15}}$
8. $\dfrac{2}{\sqrt{3}}$
9. $-\dfrac{2}{\sqrt{3}}$
10. $\dfrac{3}{\sqrt{5}}$
11. $\dfrac{1}{\sqrt{12}}$
12. $\dfrac{4}{\sqrt{20}}$
13. $-\dfrac{4}{\sqrt{7}}$

14. $\frac{9}{\sqrt{3}}$

15. $\frac{5}{\sqrt{10}}$

16. $-\frac{6}{\sqrt{3}}$

17. $\frac{5}{\sqrt{15}}$

18. $\frac{2}{\sqrt{11}}$

19. $-\frac{7}{\sqrt{7}}$

20. $\frac{2}{\sqrt{12}}$

21. $\frac{3}{\sqrt{20}}$

22. $-\frac{5}{\sqrt{48}}$

23. $-\frac{4}{\sqrt{72}}$

24. $\frac{5}{\sqrt{7}}$

25. $\frac{3}{\sqrt{10}}$

26. $\frac{7}{\sqrt{13}}$

27. $\frac{11}{\sqrt{15}}$

28. $\frac{5}{\sqrt{30}}$

29. $\frac{6}{\sqrt{12}}$

30. $\frac{7}{\sqrt{21}}$

31. $-\frac{12}{\sqrt{6}}$

32. $\frac{4}{\sqrt{10}}$

33. $-\frac{8}{\sqrt{14}}$

34. $\frac{16}{\sqrt{48}}$

35. $\frac{8}{\sqrt{96}}$

36. $\frac{25}{\sqrt{200}}$

37. $\frac{30}{\sqrt{500}}$

$\frac{\sqrt{b}}{\sqrt{a}}$꼴의 유리화

◪ 다음 수의 분모를 유리화하여라.

38. $\frac{\sqrt{3}}{\sqrt{5}}$

39. $\frac{\sqrt{7}}{\sqrt{48}}$

40. $\frac{\sqrt{2}}{\sqrt{5}}$

41. $\frac{\sqrt{10}}{\sqrt{3}}$

42. $\frac{\sqrt{2}}{\sqrt{7}}$

43. $\frac{\sqrt{7}}{\sqrt{6}}$

44. $\frac{\sqrt{5}}{\sqrt{7}}$

45. $\frac{\sqrt{2}}{\sqrt{3}}$

46. $\frac{\sqrt{5}}{\sqrt{6}}$

47. $\frac{\sqrt{3}}{\sqrt{7}}$

48. $\frac{\sqrt{5}}{\sqrt{8}}$

49. $\frac{\sqrt{11}}{\sqrt{10}}$

50. $\frac{\sqrt{7}}{\sqrt{11}}$

51. $\frac{\sqrt{3}}{\sqrt{13}}$

52. $\frac{\sqrt{7}}{\sqrt{15}}$

53. $\frac{3}{2\sqrt{3}}$

54. $\frac{\sqrt{10}}{\sqrt{11}}$

55. $\frac{\sqrt{13}}{\sqrt{5}}$

56. $\frac{\sqrt{5}}{\sqrt{14}}$

57. $\frac{\sqrt{6}}{\sqrt{21}}$

58. $-\frac{\sqrt{6}}{\sqrt{15}}$

59. $\frac{\sqrt{14}}{\sqrt{6}}$

60. $\frac{6\sqrt{2}}{\sqrt{10}}$

61. $\frac{3\sqrt{6}}{\sqrt{18}}$

62. $\frac{2\sqrt{5}}{\sqrt{14}}$

63. $-\frac{6\sqrt{2}}{\sqrt{3}}$

64. $-\frac{3\sqrt{2}}{\sqrt{6}}$

65. $-\frac{2\sqrt{7}}{\sqrt{18}}$

66. $\frac{6\sqrt{5}}{\sqrt{24}}$

67. $\frac{\sqrt{18}}{\sqrt{96}}$

68. $\frac{4\sqrt{7}}{\sqrt{14}}$

69. $-\frac{5\sqrt{3}}{\sqrt{20}}$

70. $\frac{2\sqrt{12}}{\sqrt{30}}$

71. $\frac{3\sqrt{15}}{\sqrt{50}}$

72. $\frac{4\sqrt{11}}{\sqrt{8}}$

73. $\frac{5\sqrt{13}}{\sqrt{65}}$

$\frac{c}{b\sqrt{a}}$ 꼴의 유리화

◪ 다음 수의 분모를 유리화하여라.

74. $\frac{3}{4\sqrt{2}}$

75. $\frac{\sqrt{2}}{3\sqrt{6}}$

76. $-\frac{\sqrt{3}}{2\sqrt{2}}$

77. $\frac{\sqrt{10}}{3\sqrt{3}}$

78. $\frac{3\sqrt{2}}{4\sqrt{3}}$

79. $\frac{5\sqrt{3}}{2\sqrt{5}}$

80. $\frac{3}{7\sqrt{2}}$

81. $\frac{6}{5\sqrt{3}}$

82. $\frac{2}{3\sqrt{3}}$

83. $\frac{3}{2\sqrt{6}}$

84. $\frac{15}{2\sqrt{5}}$

85. $\frac{2}{3\sqrt{5}}$

86. $\frac{6}{5\sqrt{7}}$

87. $\frac{5}{2\sqrt{11}}$

88. $\frac{\sqrt{2}}{5\sqrt{3}}$

89. $\frac{\sqrt{3}}{6\sqrt{5}}$

90. $\frac{3}{4\sqrt{3}}$

91. $\frac{6}{5\sqrt{3}}$

92. $\frac{11}{9\sqrt{2}}$

93. $\frac{\sqrt{5}}{\sqrt{3}\sqrt{7}}$

94. $\frac{\sqrt{5}}{\sqrt{2}\sqrt{11}}$

95. $\frac{\sqrt{2}}{\sqrt{3}\sqrt{5}}$

96. $\frac{\sqrt{3}}{\sqrt{2}\sqrt{7}}$

97. $\frac{\sqrt{15}}{\sqrt{6}\sqrt{10}}$

98. $\frac{\sqrt{18}}{4\sqrt{15}}$

99. $\frac{7\sqrt{3}}{\sqrt{2}\sqrt{98}}$

100. $\frac{3\sqrt{2}}{\sqrt{5}\sqrt{15}}$

정답 및 해설

1) $\frac{\sqrt{2}}{2}$

2) $\frac{\sqrt{3}}{3}$

⇨ $\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{3}}{3}$

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

⇨ $\frac{1}{\sqrt{5}}=\frac{\sqrt{5}}{\sqrt{5}\times\sqrt{5}}=\frac{\sqrt{5}}{5}$

4) $\frac{\sqrt{7}}{7}$

⇨ $\frac{1}{\sqrt{7}}=\frac{\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=\frac{\sqrt{7}}{7}$

5) $\frac{\sqrt{10}}{10}$

⇨ $\frac{1}{\sqrt{10}}=\frac{\sqrt{10}}{\sqrt{10}\times\sqrt{10}}=\frac{\sqrt{10}}{10}$

6) $\frac{\sqrt{11}}{11}$

⇨ $\frac{1}{\sqrt{11}}=\frac{\sqrt{11}}{\sqrt{11}\times\sqrt{11}}=\frac{\sqrt{11}}{11}$

7) $\frac{\sqrt{15}}{15}$

⇨ $\frac{1}{\sqrt{15}}=\frac{\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=\frac{\sqrt{15}}{15}$

8) $\frac{2\sqrt{3}}{3}$

⇨ $\frac{2}{\sqrt{3}}=\frac{2\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{2\sqrt{3}}{3}$

9) $-\frac{2\sqrt{3}}{3}$

10) $\frac{3\sqrt{5}}{5}$

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

11) $\frac{\sqrt{3}}{6}$

⇨ $\frac{1}{\sqrt{12}}=\frac{1\times\sqrt{3}}{2\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{3}}{6}$

12) $\frac{2\sqrt{5}}{5}$

⇨ $\frac{4}{\sqrt{20}}=\frac{4\times\sqrt{5}}{2\sqrt{5}\times\sqrt{5}}=\frac{4\sqrt{5}}{10}=\frac{2\sqrt{5}}{5}$

13) $-\frac{4\sqrt{7}}{7}$

⇨ $-\frac{4}{\sqrt{7}}=\frac{4\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=-\frac{4\sqrt{7}}{7}$

14) $3\sqrt{3}$

⇨ $\frac{9}{\sqrt{3}}=\frac{9\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{9\sqrt{3}}{3}=3\sqrt{3}$

15) $\frac{\sqrt{10}}{2}$

⇨ $\frac{5}{\sqrt{10}}=\frac{5\times\sqrt{10}}{\sqrt{10}\times\sqrt{10}}=\frac{5\sqrt{10}}{10}=\frac{\sqrt{10}}{2}$

16) $-2\sqrt{3}$

⇨ $-\frac{6}{\sqrt{3}}=-\frac{6\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=-\frac{6\sqrt{3}}{3}=-2\sqrt{3}$

17) $\frac{\sqrt{15}}{3}$

⇨ $\frac{5}{\sqrt{15}}=\frac{5\times\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=\frac{5\sqrt{15}}{15}=\frac{\sqrt{15}}{3}$

18) $\frac{2\sqrt{11}}{11}$

⇨ $\frac{2}{\sqrt{11}}=\frac{2\times\sqrt{11}}{\sqrt{11}\times\sqrt{11}}=\frac{2\sqrt{11}}{11}$

19) $-\sqrt{7}$

⇨ $-\frac{7}{\sqrt{7}}=-\frac{7\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=-\frac{7\sqrt{7}}{7}=-\sqrt{7}$

20) $\frac{\sqrt{3}}{3}$

⇨ $\frac{2}{\sqrt{12}}=\frac{2}{2\sqrt{3}}=\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{3}}{3}$

21) $\frac{3\sqrt{5}}{10}$

⇨ $\frac{3}{\sqrt{20}}=\frac{3}{2\sqrt{5}}=\frac{3\times\sqrt{5}}{2\sqrt{5}\times\sqrt{5}}=\frac{3\sqrt{5}}{10}$

22) $-\frac{5\sqrt{3}}{12}$

⇨ $-\frac{5}{\sqrt{48}}=-\frac{5}{4\sqrt{3}}=-\frac{5\times\sqrt{3}}{4\sqrt{3}\times\sqrt{3}}=-\frac{5\sqrt{3}}{12}$

23) $-\frac{\sqrt{2}}{3}$

⇨ $-\frac{4}{\sqrt{72}}=-\frac{4}{6\sqrt{2}}=-\frac{2}{3\sqrt{2}}=-\frac{2\times\sqrt{2}}{3\sqrt{2}\times\sqrt{2}}$
$=-\frac{2\sqrt{2}}{6}=-\frac{\sqrt{2}}{3}$

24) $\frac{5\sqrt{7}}{7}$

⇨ $\frac{5}{\sqrt{7}}=\frac{5\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=\frac{5\sqrt{7}}{7}$

25) $\frac{3\sqrt{10}}{10}$

⇨ $\frac{3}{\sqrt{10}}=\frac{3\times\sqrt{10}}{\sqrt{10}\times\sqrt{10}}=\frac{3\sqrt{10}}{10}$

26) $\frac{7\sqrt{13}}{13}$

⇨ $\frac{7}{\sqrt{13}}=\frac{7\times\sqrt{13}}{\sqrt{13}\times\sqrt{13}}=\frac{7\sqrt{13}}{13}$

27) $\frac{11\sqrt{15}}{15}$

⇨ $\frac{11}{\sqrt{15}}=\frac{11\times\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=\frac{11\sqrt{15}}{15}$

28) $\frac{\sqrt{30}}{6}$

⇨ $\frac{5}{\sqrt{30}}=\frac{5\sqrt{30}}{30}=\frac{\sqrt{30}}{6}$

29) $\sqrt{3}$

⇨ $\frac{6}{\sqrt{12}}=\frac{6}{2\sqrt{3}}=\frac{3}{\sqrt{3}}=\frac{3\sqrt{3}}{3}=\sqrt{3}$

30) $\frac{\sqrt{21}}{3}$

31) $-2\sqrt{6}$

32) $\frac{2\sqrt{10}}{5}$

33) $-\frac{4\sqrt{14}}{7}$

34) $\frac{4\sqrt{3}}{3}$

⇨ $\frac{16}{\sqrt{48}}=\frac{16}{\sqrt{4^2\times3}}=\frac{16}{4\sqrt{3}}=\frac{4}{\sqrt{3}}=\frac{4\sqrt{3}}{3}$

35) $\frac{\sqrt{6}}{3}$

⇨ $\frac{8}{\sqrt{96}}=\frac{8}{\sqrt{4^2\times6}}=\frac{8}{4\sqrt{6}}=\frac{2}{\sqrt{6}}=\frac{2\sqrt{6}}{6}=\frac{\sqrt{6}}{3}$

36) $\frac{5\sqrt{2}}{4}$

⇨ $\frac{25}{\sqrt{200}}=\frac{25}{\sqrt{10^2\times2}}=\frac{25}{10\sqrt{2}}=\frac{25\sqrt{2}}{10\times2}=\frac{5\sqrt{2}}{4}$

37) $\frac{3\sqrt{5}}{5}$

⇨ $\frac{30}{\sqrt{500}}=\frac{30}{\sqrt{10^2\times5}}=\frac{30}{10\sqrt{5}}=\frac{3\sqrt{5}}{5}$

38) $\frac{\sqrt{15}}{5}$

⇨ $\frac{\sqrt{3}}{\sqrt{5}}=\frac{\sqrt{3}\times\sqrt{5}}{\sqrt{5}\times\sqrt{5}}=\frac{\sqrt{15}}{5}$

39) $\frac{\sqrt{21}}{12}$

⇨ $\frac{\sqrt{7}}{\sqrt{48}}=\frac{\sqrt{7}}{4\sqrt{3}}=\frac{\sqrt{7}\times\sqrt{3}}{4\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{21}}{12}$

40) $\frac{\sqrt{10}}{5}$

⇨ $\frac{\sqrt{2}}{\sqrt{5}}=\frac{\sqrt{2}\times\sqrt{5}}{\sqrt{5}\times\sqrt{5}}=\frac{\sqrt{10}}{5}$

41) $\frac{\sqrt{30}}{3}$

⇨ $\frac{\sqrt{10}}{\sqrt{3}}=\frac{\sqrt{10}\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{30}}{3}$

42) $\frac{\sqrt{14}}{7}$

⇨ $\frac{\sqrt{2}}{\sqrt{7}}=\frac{\sqrt{2}\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=\frac{\sqrt{14}}{7}$

43) $\frac{\sqrt{42}}{6}$

⇨ $\frac{\sqrt{7}}{\sqrt{6}}=\frac{\sqrt{7}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}}=\frac{\sqrt{42}}{6}$

44) $\frac{\sqrt{35}}{7}$

⇨ $\frac{\sqrt{5}}{\sqrt{7}}=\frac{\sqrt{5}\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=\frac{\sqrt{35}}{7}$

45) $\frac{\sqrt{6}}{3}$

⇨ $\frac{\sqrt{2}}{\sqrt{3}}=\frac{\sqrt{2}\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{6}}{3}$

46) $\frac{\sqrt{30}}{6}$

⇨ $\frac{\sqrt{5}}{\sqrt{6}}=\frac{\sqrt{5}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}}=\frac{\sqrt{30}}{6}$

47) $\frac{\sqrt{21}}{7}$

⇨ $\frac{\sqrt{3}}{\sqrt{7}}=\frac{\sqrt{3}\times\sqrt{7}}{\sqrt{7}\times\sqrt{7}}=\frac{\sqrt{21}}{7}$

48) $\frac{\sqrt{10}}{4}$

⇨ $\frac{\sqrt{5}}{\sqrt{8}}=\frac{\sqrt{5}}{2\sqrt{2}}=\frac{\sqrt{5}\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}=\frac{\sqrt{10}}{4}$

49) $\frac{\sqrt{110}}{10}$

⇨ $\frac{\sqrt{11}}{\sqrt{10}}=\frac{\sqrt{11}\times\sqrt{10}}{\sqrt{10}\times\sqrt{10}}=\frac{\sqrt{110}}{10}$

50) $\frac{\sqrt{77}}{11}$

⇨ $\frac{\sqrt{7}}{\sqrt{11}}=\frac{\sqrt{7}\times\sqrt{11}}{\sqrt{11}\times\sqrt{11}}=\frac{\sqrt{77}}{11}$

51) $\frac{\sqrt{39}}{13}$

⇨ $\frac{\sqrt{3}}{\sqrt{13}}=\frac{\sqrt{3}\times\sqrt{13}}{\sqrt{13}\times\sqrt{13}}=\frac{\sqrt{39}}{13}$

52) $\frac{\sqrt{105}}{15}$

⇨ $\frac{\sqrt{7}}{\sqrt{15}}=\frac{\sqrt{7}\times\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=\frac{\sqrt{105}}{15}$

53) $\frac{\sqrt{3}}{2}$

⇨ $\frac{3}{2\sqrt{3}}=\frac{3\times\sqrt{3}}{2\sqrt{3}\times\sqrt{3}}=\frac{3\sqrt{3}}{2\times3}=\frac{\sqrt{3}}{2}$

54) $\frac{\sqrt{110}}{11}$

⇨ $\frac{\sqrt{10}}{\sqrt{11}}=\frac{\sqrt{10}\times\sqrt{11}}{\sqrt{11}\times\sqrt{11}}=\frac{\sqrt{110}}{11}$

55) $\frac{\sqrt{65}}{5}$

56) $\frac{\sqrt{70}}{14}$

57) $\frac{\sqrt{14}}{7}$

⇨ $\frac{\sqrt{6}}{\sqrt{21}}=\frac{\sqrt{6}\times\sqrt{21}}{21}=\frac{\sqrt{3^2\times14}}{21}=\frac{3\sqrt{14}}{21}=\frac{\sqrt{14}}{7}$

58) $-\frac{\sqrt{10}}{5}$

⇨ $-\frac{\sqrt{6}}{\sqrt{15}}=-\frac{\sqrt{6}\times\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=-\frac{\sqrt{90}}{15}$
$=-\frac{3\sqrt{10}}{15}=-\frac{\sqrt{10}}{5}$

59) $\frac{\sqrt{21}}{3}$

⇨ $\frac{\sqrt{14}}{\sqrt{6}}=\frac{\sqrt{14}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}}=\frac{\sqrt{84}}{6}=\frac{2\sqrt{21}}{6}=\frac{\sqrt{21}}{3}$

60) $\frac{6\sqrt{5}}{5}$

⇨ $\frac{6\sqrt{2}}{\sqrt{10}}=\frac{6\sqrt{2}\times\sqrt{10}}{\sqrt{10}\times\sqrt{10}}=\frac{6\sqrt{20}}{10}$
$=\frac{12\sqrt{5}}{10}=\frac{6\sqrt{5}}{5}$

61) $\sqrt{3}$

⇨ $\frac{3\sqrt{6}}{\sqrt{18}}=\frac{3\sqrt{6}\times\sqrt{2}}{3\sqrt{2}\times\sqrt{2}}=\frac{6\sqrt{3}}{6}=\sqrt{3}$

62) $\frac{\sqrt{70}}{7}$

⇨ $\frac{2\sqrt{5}}{\sqrt{14}}=\frac{2\sqrt{5}\times\sqrt{14}}{\sqrt{14}\times\sqrt{14}}=\frac{2\sqrt{70}}{14}=\frac{\sqrt{70}}{7}$

63) $-2\sqrt{6}$

⇨ $-\frac{6\sqrt{2}}{\sqrt{3}}=-\frac{6\sqrt{2}\times\sqrt{3}}{\sqrt{3}\times\sqrt{3}}=-\frac{6\sqrt{6}}{3}=-2\sqrt{6}$

64) $-\sqrt{3}$

⇨ $-\frac{3\sqrt{2}}{\sqrt{6}}=-\frac{3\sqrt{2}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}}=-\frac{3\sqrt{12}}{6}$
$=-\frac{6\sqrt{3}}{6}=-\sqrt{3}$

65) $-\frac{\sqrt{14}}{3}$

⇨ $-\frac{2\sqrt{7}}{\sqrt{18}}=-\frac{2\sqrt{7}}{3\sqrt{2}}=-\frac{2\sqrt{7}\times\sqrt{2}}{3\sqrt{2}\times\sqrt{2}}$
$=-\frac{2\sqrt{14}}{6}=-\frac{\sqrt{14}}{3}$

66) $\frac{\sqrt{30}}{2}$

⇨ $\frac{6\sqrt{5}}{\sqrt{24}}=\frac{6\sqrt{5}}{2\sqrt{6}}=\frac{3\sqrt{5}}{\sqrt{6}}=\frac{3\sqrt{5}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}}=\frac{3\sqrt{30}}{6}=\frac{\sqrt{30}}{2}$

67) $\frac{\sqrt{3}}{4}$

⇨ $\frac{\sqrt{18}}{\sqrt{96}}=\frac{3\sqrt{2}}{4\sqrt{6}}=\frac{3\sqrt{2}\times\sqrt{6}}{4\times6}=\frac{6\sqrt{3}}{24}=\frac{\sqrt{3}}{4}$

68) $2\sqrt{2}$

69) $-\frac{\sqrt{15}}{2}$

⇨ $-\frac{5\sqrt{3}}{\sqrt{20}}=-\frac{5\sqrt{3}\times\sqrt{5}}{2\sqrt{5}\times\sqrt{5}}=-\frac{5\sqrt{15}}{10}=-\frac{\sqrt{15}}{2}$

70) $\frac{2\sqrt{10}}{5}$

71) $\frac{3\sqrt{30}}{10}$

72) $\sqrt{22}$

73) $\sqrt{5}$

74) $\frac{3\sqrt{2}}{8}$

⇨ $\frac{3}{4\sqrt{2}}=\frac{3\times\sqrt{2}}{4\sqrt{2}\times\sqrt{2}}=\frac{3\sqrt{2}}{8}$

75) $\frac{\sqrt{3}}{9}$

76) $-\frac{\sqrt{6}}{4}$

⇨ $-\frac{\sqrt{3}}{2\sqrt{2}}=-\frac{\sqrt{3}\times\sqrt{2}}{2\sqrt{2}\times\sqrt{2}}=-\frac{\sqrt{6}}{4}$

77) $\frac{\sqrt{30}}{9}$

⇨ $\frac{\sqrt{10}}{3\sqrt{3}}=\frac{\sqrt{10}\times\sqrt{3}}{3\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{30}}{9}$

78) $\frac{\sqrt{6}}{4}$

⇨ $\frac{3\sqrt{2}}{4\sqrt{3}}=\frac{3\sqrt{2}\times\sqrt{3}}{4\sqrt{3}\times\sqrt{3}}=\frac{3\sqrt{6}}{12}=\frac{\sqrt{6}}{4}$

79) $\frac{\sqrt{15}}{2}$

⇨ $\frac{5\sqrt{3}}{2\sqrt{5}}=\frac{5\sqrt{3}\times\sqrt{5}}{2\sqrt{5}\times\sqrt{5}}=\frac{5\sqrt{15}}{10}=\frac{\sqrt{15}}{2}$

80) $\frac{3\sqrt{2}}{14}$

⇨ $\frac{3}{7\sqrt{2}}=\frac{3\times\sqrt{2}}{7\sqrt{2}\times\sqrt{2}}=\frac{3\sqrt{2}}{14}$

81) $\frac{2\sqrt{3}}{5}$

⇨ $\frac{6}{5\sqrt{3}}=\frac{6\times\sqrt{3}}{5\sqrt{3}\times\sqrt{3}}=\frac{6\sqrt{3}}{15}=\frac{2\sqrt{3}}{5}$

82) $\frac{2\sqrt{3}}{9}$

⇨ $\frac{2}{3\sqrt{3}}=\frac{2\times\sqrt{3}}{3\sqrt{3}\times\sqrt{3}}=\frac{2\sqrt{3}}{9}$

83) $\frac{\sqrt{6}}{4}$

⇨ $\frac{3}{2\sqrt{6}}=\frac{3\times\sqrt{6}}{2\sqrt{6}\times\sqrt{6}}=\frac{3\sqrt{6}}{12}=\frac{\sqrt{6}}{4}$

84) $\frac{3\sqrt{5}}{2}$

⇨ $\frac{15}{2\sqrt{5}}=\frac{15\times\sqrt{5}}{2\sqrt{5}\times\sqrt{5}}=\frac{15\sqrt{5}}{10}=\frac{3\sqrt{5}}{2}$

85) $\frac{2\sqrt{5}}{15}$

⇨ $\frac{2}{3\sqrt{5}}=\frac{2\times\sqrt{5}}{3\sqrt{5}\times\sqrt{5}}=\frac{2\sqrt{5}}{3\times5}=\frac{2\sqrt{5}}{15}$

86) $\frac{6\sqrt{7}}{35}$

⇨ $\frac{6}{5\sqrt{7}}=\frac{6\times\sqrt{7}}{5\sqrt{7}\times\sqrt{7}}=\frac{6\sqrt{7}}{5\times7}=\frac{6\sqrt{7}}{35}$

87) $\frac{5\sqrt{11}}{22}$

⇨ $\frac{5}{2\sqrt{11}}=\frac{5\times\sqrt{11}}{2\sqrt{11}\times\sqrt{11}}=\frac{5\sqrt{11}}{2\times11}=\frac{5\sqrt{11}}{22}$

88) $\frac{\sqrt{6}}{15}$

⇨ $\frac{\sqrt{2}}{5\sqrt{3}}=\frac{\sqrt{2}\times\sqrt{3}}{5\sqrt{3}\times\sqrt{3}}=\frac{\sqrt{2\times3}}{5\times3}=\frac{\sqrt{6}}{15}$

89) $\frac{\sqrt{15}}{30}$

⇨ $\frac{\sqrt{3}}{6\sqrt{5}}=\frac{\sqrt{3}\times\sqrt{5}}{6\sqrt{5}\times\sqrt{5}}=\frac{\sqrt{3\times5}}{6\times5}=\frac{\sqrt{15}}{30}$

90) $\frac{\sqrt{3}}{4}$

⇨ $\frac{3}{4\sqrt{3}}=\frac{3\times\sqrt{3}}{4\sqrt{3}\times\sqrt{3}}=\frac{3\sqrt{3}}{12}=\frac{\sqrt{3}}{4}$

91) $\frac{2\sqrt{3}}{5}$

⇨ $\frac{6}{5\sqrt{3}}=\frac{6\times\sqrt{3}}{5\sqrt{3}\times\sqrt{3}}=\frac{2\sqrt{3}}{5}$

92) $\frac{11\sqrt{2}}{18}$

⇨ $\frac{11}{9\sqrt{2}}=\frac{11\times\sqrt{2}}{9\sqrt{2}\times\sqrt{2}}=\frac{11\sqrt{2}}{18}$

93) $\frac{\sqrt{105}}{21}$

⇨ $\frac{\sqrt{5}}{\sqrt{3}\sqrt{7}}=\frac{\sqrt{5}\times\sqrt{3}\times\sqrt{7}}{\sqrt{3}\times\sqrt{3}\times\sqrt{7}\times\sqrt{7}}=\frac{\sqrt{105}}{21}$

94) $\frac{\sqrt{110}}{22}$

⇨ $\frac{\sqrt{5}}{\sqrt{2}\sqrt{11}}=\frac{\sqrt{5}\times\sqrt{2}\times\sqrt{11}}{\sqrt{2}\times\sqrt{2}\times\sqrt{11}\times\sqrt{11}}=\frac{\sqrt{110}}{22}$

95) $\frac{\sqrt{30}}{15}$

⇨ $\frac{\sqrt{2}}{\sqrt{3}\sqrt{5}}=\frac{\sqrt{2}}{\sqrt{15}}=\frac{\sqrt{2}\times\sqrt{15}}{\sqrt{15}\times\sqrt{15}}=\frac{\sqrt{30}}{15}$

96) $\frac{\sqrt{42}}{14}$

⇨ $\frac{\sqrt{3}}{\sqrt{2}\sqrt{7}}=\frac{\sqrt{3}}{\sqrt{14}}=\frac{\sqrt{3}\times\sqrt{14}}{\sqrt{14}\times\sqrt{14}}=\frac{\sqrt{42}}{14}$

97) $\frac{1}{2}$

98) $\frac{\sqrt{30}}{20}$

⇨ $\frac{\sqrt{18}}{4\sqrt{15}}=\frac{\sqrt{18}\times\sqrt{15}}{4\times15}=\frac{3\sqrt{30}}{60}=\frac{\sqrt{30}}{20}$

99) $\frac{\sqrt{3}}{2}$

100) $\frac{\sqrt{6}}{5}$

⇨ $\frac{3\sqrt{2}}{\sqrt{5}\sqrt{15}}=\frac{3\sqrt{2}}{5\sqrt{3}}=\frac{3\sqrt{2}\times\sqrt{3}}{15}=\frac{\sqrt{6}}{5}$