

問題番号 09M02_kakunin3_2 レベル ☆☆☆	うんな進学塾 中3 第2章 平方根⑤～⑧ 練習問題 No.2 解答	うんな進学塾HP 
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1. 次の数の分母を有理化しなさい。

$$(1) \frac{5}{\sqrt{18}}$$

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

$$(2) \frac{\sqrt{20} - \sqrt{5}}{\sqrt{5}}$$

$$= \frac{\sqrt{5(2-1)}}{\sqrt{5}} = 1$$

$$(3) \frac{5}{\sqrt{7} - \sqrt{2}}$$

$$\frac{5(\sqrt{7} + \sqrt{2})}{(\sqrt{7} - \sqrt{2})(\sqrt{7} + \sqrt{2})} = \frac{5(\sqrt{7} + \sqrt{2})}{5}$$

(1) $\frac{5\sqrt{2}}{6}$	(2) $2 + \sqrt{5}$	(3) $\sqrt{7} + \sqrt{2}$
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2. 次の計算をしなさい。

$$(1) \sqrt{12} \times (-\sqrt{27}) = 2\sqrt{3} \times (-3\sqrt{3}) = -18$$

$$(2) \sqrt{48} \div \sqrt{16} = \sqrt{\frac{48}{16}} = \sqrt{3}$$

$$(3) \frac{\sqrt{72} \times \sqrt{20}}{-\sqrt{5}} = \frac{6\sqrt{2} \times 2\sqrt{5}}{-\sqrt{5}} = \frac{12\sqrt{10}}{-\sqrt{5}}$$

$$= \frac{12\sqrt{10} \cdot \sqrt{5}}{-5} = \frac{60\sqrt{2}}{-5} = -12\sqrt{2}$$

$$(4) \sqrt{54} - 2\sqrt{6} + \sqrt{6}$$

$$= 3\sqrt{6} - 2\sqrt{6} + \sqrt{6} = 2\sqrt{6}$$

$$(5) \sqrt{3}(\sqrt{50} + 2\sqrt{3})$$

$$= \sqrt{3}(5\sqrt{2} + 2\sqrt{3}) = 5\sqrt{6} + 6$$

$$(6) (3\sqrt{7} - \sqrt{5})(3\sqrt{7} + \sqrt{5})$$

$$= (3\sqrt{7})^2 - (\sqrt{5})^2 = 63 - 5 = 58$$

$$(7) \sqrt{75} + \frac{8}{\sqrt{3}}$$

$$= 5\sqrt{3} + \frac{8\sqrt{3}}{3} = \frac{15\sqrt{3} + 8\sqrt{3}}{3} = \frac{23\sqrt{3}}{3}$$

$$(8) \sqrt{\frac{5}{2}} + \frac{36\sqrt{5}}{\sqrt{18}} = \frac{\sqrt{10}}{2} + \frac{36\sqrt{5}}{3\sqrt{2}}$$

$$= \frac{\sqrt{10}}{2} + \frac{12\sqrt{5}}{\sqrt{2}} = \frac{\sqrt{10}}{2} + 6\sqrt{10} = \frac{13\sqrt{10}}{2}$$

$$(9) \frac{3\sqrt{2}}{\sqrt{3} - \sqrt{2}} + 2\sqrt{6} = \frac{3\sqrt{2}(\sqrt{3} + \sqrt{2})}{(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})} + 2\sqrt{6}$$

$$= 3\sqrt{6} + 6 + 2\sqrt{6} = 6 + 5\sqrt{6}$$

$$(10) (\sqrt{\frac{3}{4}} - 1)(\sqrt{\frac{3}{4}} + 5)$$

$$= \left(\sqrt{\frac{3}{4}}\right)^2 + 4\left(\sqrt{\frac{3}{4}}\right) - 5 = \frac{3}{4} + 2\sqrt{3} - 5$$

(1) -18	(2) $\sqrt{3}$	(3) $-12\sqrt{2}$	(4) $2\sqrt{6}$	(5) $6 + 5\sqrt{6}$
(6) 58	(7) $\frac{23\sqrt{3}}{3}$	(8) $\frac{13\sqrt{10}}{2}$	(9) $6 + 5\sqrt{6}$	(10) $-\frac{17}{4} + 2\sqrt{3}$