N.RN.B.3: Operations with Radicals 2

1 Expressed in simplest radical form, the product of $\sqrt{6} \cdot \sqrt{15}$ is
   1) $\sqrt{90}$
   2) $3\sqrt{10}$
   3) $9\sqrt{10}$
   4) $3\sqrt{15}$

2 Which value is equivalent to the product of $4\sqrt{2}$ and $2\sqrt{6}$?
   1) $16\sqrt{3}$
   2) $6\sqrt{12}$
   3) $6\sqrt{8}$
   4) $24\sqrt{2}$

3 Simplify: $\sqrt{8} \times \sqrt{12}$

4 Simplify: $\sqrt{30} \times \sqrt{40}$

5 Simplify: $8\sqrt{12} \times 3\sqrt{24}$

6 The expression $\dfrac{6\sqrt{20}}{3\sqrt{5}}$ is equivalent to
   1) $3\sqrt{15}$
   2) $2\sqrt{15}$
   3) 8
   4) 4

7 Rationalize the denominator of the fraction below. Express the solution in simplest form.
   $$\frac{4}{\sqrt{2}}$$

8 Rationalize: $\dfrac{3}{2\sqrt{6}}$

9 Simplify: $\sqrt{24} \div \sqrt{32}$

10 Simplify: $\dfrac{\sqrt{18}}{\sqrt{54}}$

11 Simplify: $\dfrac{\sqrt{45}}{\sqrt{80}}$

12 Express $\dfrac{\sqrt{84}}{2\sqrt{3}}$ in simplest radical form.

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Answer Section

1 ANS: 2

$$\sqrt{6} \cdot \sqrt{15} = \sqrt{90} = \sqrt{9}\sqrt{10} = 3\sqrt{10}$$

   REF: 060627a

2 ANS: 1

$$4\sqrt{2} \cdot 2\sqrt{6} = 8\sqrt{12} = 8\sqrt{4} \cdot \sqrt{3} = 16\sqrt{3}$$

   REF: 061528ia

3 ANS:

$$4\sqrt{6}$$

   REF: 119313al

4 ANS:

$$20\sqrt{3}$$

   REF: 039505al

5 ANS:

$$288\sqrt{2}$$

   REF: 039114al

6 ANS: 4

$$\frac{6\sqrt{20}}{3\sqrt{5}} = \frac{6}{3}\frac{\sqrt{20}}{\sqrt{5}} = 2\sqrt{\frac{20}{5}} = 2\sqrt{4} = 4$$

   REF: 010622a

7 ANS:

$$\frac{4}{\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$

   REF: 012530ai

8 ANS:

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

   REF: fall2303ai

9 ANS:

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

   REF: 119313al

10 ANS:

$\dfrac{\sqrt{3}}{3}$

REF: 039505al

11 ANS:

$\dfrac{3}{4}$

REF: 099414al

12 ANS:

$\dfrac{\sqrt{84}}{2\sqrt{3}} = \dfrac{\sqrt{4}\sqrt{21}}{2\sqrt{3}} = \sqrt{\dfrac{21}{3}} = \sqrt{7}$

REF: 011431ia