

GRE Arithmetic Practice Test 7

1.

Which of the following is equivalent to $\frac{x + \sqrt{3}}{3x + \sqrt{2}}$?

Possible Answers:

$$\frac{3x^2 + 3x\sqrt{2} + x\sqrt{3} + \sqrt{6}}{9x^2 - 2}$$

$$\frac{3x^2 - x\sqrt{2} + 3x\sqrt{3} - \sqrt{6}}{9x^2 - 2}$$

$$\frac{4x + \sqrt{5}}{3x + 2}$$

$$\frac{3x^2 + \sqrt{6}}{3x - 2}$$

$$\frac{3x^2 - \sqrt{6}}{9x^2 + 2}$$

2.

Which of the following is the most simplified form of:

$$\sqrt{468}$$

Possible Answers:

$$4\sqrt{29}$$

$$\sqrt{468}$$

$$2\sqrt{117}$$

$$17\sqrt{2}$$

$$6\sqrt{13}$$

3.

What is $\sqrt{432}$ equal to?

Possible Answers:

$6\sqrt{4}$

$144\sqrt{3}$

$6\sqrt{3}$

$12\sqrt{12}$

$12\sqrt{3}$

4.

Which of the following is equivalent to:

$\sqrt{210} + \sqrt{55}$?

Possible Answers:

$7\sqrt{30} + 5\sqrt{11}$

$5\sqrt{462}$

$\sqrt{265}$

$\sqrt{5}(\sqrt{42} + \sqrt{11})$

$5\sqrt{7} + \sqrt{11}$

5.

Simplify:

$$\sqrt{15} - \sqrt{20} + \sqrt{35}$$

Possible Answers:

$$\sqrt{2}(\sqrt{5} + 2\sqrt{7})$$

$$\sqrt{7} - 3\sqrt{5}$$

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

$$2\sqrt{15} + \sqrt{2}$$

$$\sqrt{5}(\sqrt{10} - 2)$$

6.

Simplify the following:

$$\sqrt{125} + \sqrt{245} + \sqrt{80}$$

Possible Answers:

$$\sqrt{450}$$

$$16\sqrt{5}$$

It cannot be simplified any further

$$90\sqrt{5}$$

$$3\sqrt{5} + 21\sqrt{2}$$

7.

Simplify the following:

$$\sqrt{40} + \sqrt{20} + \sqrt{160}$$

Possible Answers:

$$8\sqrt{10}$$

The expression cannot be simplified any further.

$$\sqrt{10}(6 + \sqrt{2})$$

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

$$4\sqrt{20}$$

8.

$$\frac{\sqrt{243}}{\sqrt{48}} =$$

Possible Answers:

$$\frac{9}{4}$$

$$9\sqrt{3}$$

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

$$4\sqrt{3}$$

$$\frac{81}{16}$$

9.

$$\frac{\sqrt{343}}{\sqrt{63}} =$$

Possible Answers:

$$7\sqrt{7}$$

$$\frac{3}{7}$$

$$\frac{49}{9}$$

$$\frac{7}{3}$$

$$3\sqrt{3}$$

10.

$$\frac{\sqrt{150}}{\sqrt{48}} =$$

Possible Answers:

$$\frac{5\sqrt{3}}{4}$$

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

$$5\sqrt{2}$$

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

$$\frac{25\sqrt{2}}{16}$$

11.

Simplify: $\frac{2\sqrt{3}}{\sqrt{2}} + \frac{4\sqrt{2}}{\sqrt{3}}$

Possible Answers:

$2\sqrt{6} - 4\sqrt{2}$

$2\sqrt{6}$

$4\sqrt{3} + \sqrt{2}$

$\frac{7\sqrt{6}}{3}$

None of the other answers

12.

Compare the quantities.

Quantity A: $\sqrt{60} + \sqrt{375}$

Quantity B: $\sqrt{135} + \sqrt{240}$

Possible Answers:

Quantity A is larger.

Quantity B is larger.

The two quantities are equal.

The relationship cannot be determined from the information given.

13.

Simplify the following expression: $\sqrt{60} + \sqrt{40} + \sqrt{10}$

Possible Answers:

25

$2\sqrt{15} + 3\sqrt{10}$

$5\sqrt{25}$

$2\sqrt{15} + 2\sqrt{20}$

$4\sqrt{15} + 5\sqrt{5}$

14.

Solve for x .

Note, $x \geq 0$:

$$15\sqrt{x} - 10 = 4\sqrt{x} + 4$$

Possible Answers:

$\frac{196}{121}$

$\frac{196}{11}$

81

$\frac{841}{14}$

$\frac{841}{5}$

15.

Simplify the following expression: $3\sqrt{27} + 5\sqrt{48} - 3\sqrt{147}$

Possible Answers:

$5\sqrt{3}$

Cannot be simplified any further

$8\sqrt{3}$

$5\sqrt{72}$

$2\sqrt{76}$