

11.2 Practice Test

Date _____ Period _____

Clearly show work. Circle final answers. (4pts each)

Simplify.

1) $\sqrt{32} = \sqrt{16 \cdot 2} = \boxed{4\sqrt{2}}$

2) $\sqrt{128} = \sqrt{64 \cdot 2} = \boxed{8\sqrt{2}}$

3) $\sqrt{252} = \sqrt{36 \cdot 7} = \boxed{6\sqrt{7}}$

2	252
2	126
3	63
3	21
	7

4) $\sqrt{700} = \sqrt{100 \cdot 7} = \boxed{10\sqrt{7}}$

5) $7\sqrt{32} = 7 \cdot \sqrt{16 \cdot 2} = 7 \cdot 4\sqrt{2} = \boxed{28\sqrt{2}}$

6) $-6\sqrt{72} = -6 \cdot \sqrt{36 \cdot 2} = -6 \cdot 6\sqrt{2} = \boxed{-36\sqrt{2}}$

7) $\sqrt{98x^4} = \sqrt{49x^4 \cdot 2} = \boxed{7x^2\sqrt{2}}$

8) $\sqrt{128v^3} = \sqrt{64v^2 \cdot 2v} = \boxed{8v\sqrt{2v}}$

Simplify. NO radicals in the denominator. Simplify fractions.

9) $\frac{\sqrt{6}}{\sqrt{75}} = \frac{\sqrt{6}}{\sqrt{25 \cdot 3}} = \frac{\sqrt{6}}{5\sqrt{3}} = \frac{\sqrt{2} \cdot \sqrt{3}}{5\sqrt{3}} = \boxed{\frac{\sqrt{2}}{5}}$

10) $\frac{\sqrt{25}}{\sqrt{9}} = \boxed{\frac{5}{3}}$

11) $\sqrt{\frac{144}{25}} = \frac{\sqrt{144}}{\sqrt{25}} = \boxed{\frac{12}{5}}$

12) $\frac{\sqrt{3}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \boxed{\frac{\sqrt{15}}{5}}$

13) $\frac{\sqrt{10}}{\sqrt{12}} = \frac{\sqrt{120}}{12} = \frac{\sqrt{4 \cdot 30}}{12} = \frac{2\sqrt{30}}{12} = \boxed{\frac{\sqrt{30}}{6}}$

14) $\frac{\sqrt{16}}{\sqrt{20}} = \frac{4}{\sqrt{20}} = \frac{4 \cdot \sqrt{5}}{20} = \frac{4\sqrt{5}}{20} = \frac{8\sqrt{5}}{20} = \boxed{\frac{2\sqrt{5}}{5}}$

$$\frac{2\sqrt{30}}{12} = \boxed{\frac{\sqrt{30}}{6}}$$

$$\frac{8\sqrt{5}}{20} = \boxed{\frac{2\sqrt{5}}{5}}$$

Simplify.

15) $3\sqrt{6} - \sqrt{2} + 2\sqrt{6} - \sqrt{2}$

$$\boxed{-2\sqrt{2} + 5\sqrt{6}}$$

17) $3\sqrt{8} + 2\sqrt{45} + 2\sqrt{2}$

$$3\sqrt{4}\sqrt{2} + 2\sqrt{9}\sqrt{5} + 2\sqrt{2}$$
$$6\sqrt{2} + 6\sqrt{5} + 2\sqrt{2}$$

$$\boxed{8\sqrt{2} + 6\sqrt{5}}$$

19) $\sqrt{6}(5\sqrt{6} + 2)$

$$5 \cdot 6 + 2\sqrt{6}$$

$$\boxed{2\sqrt{6} + 30}$$

21) $(\sqrt{5} + 3)(\sqrt{5} + 5)$

$$5 + 5\sqrt{5} + 3\sqrt{5} + 15$$

$$\boxed{20 + 8\sqrt{5}}$$

23) $(\sqrt{3} - 3)(\sqrt{3} + 5)$

$$3 + 5\sqrt{3} - 3\sqrt{3} - 15$$

$$\boxed{-12 + 2\sqrt{3}}$$

16) $2\sqrt{5} - \sqrt{2} - 2\sqrt{5} + 2\sqrt{3}$

$$\boxed{-\sqrt{2} + 2\sqrt{3}}$$

18) $3\sqrt{27} - \sqrt{12} + 3\sqrt{24}$

$$3\sqrt{9}\sqrt{3} - \sqrt{4}\sqrt{3} + 3\sqrt{4}\sqrt{6}$$

$$9\sqrt{3} - 2\sqrt{3} + 6\sqrt{6}$$

$$\boxed{7\sqrt{3} + 6\sqrt{6}}$$

20) $\sqrt{3}(3 + \sqrt{3})$

$$\boxed{3\sqrt{3} + 3}$$

22) $(2 + \sqrt{2})(-1 + \sqrt{2})$

$$-2 + 2\sqrt{2} - \sqrt{2} + 2$$

$$\boxed{\sqrt{2}}$$

24) $(3 + \sqrt{3})(1 + \sqrt{3})$

$$3 + 3\sqrt{3} + \sqrt{3} + 3 =$$

$$\boxed{6 + 4\sqrt{3}}$$

ADD

25) $(\sqrt{6} - \sqrt{12})^2$

expand $\rightarrow (\sqrt{6} - \sqrt{12})(\sqrt{6} - \sqrt{12})$

$$6 - \sqrt{72} - \sqrt{72} + 12$$

$$18 - 2\sqrt{72}$$

FINISH \rightarrow

$$18 - 2\sqrt{36}\sqrt{2}$$

$$\boxed{18 - 12\sqrt{2}}$$