

## Simplifying Radicals day 1

Date \_\_\_\_\_ Hour \_\_\_\_\_

Simplify.

$$1) \frac{\sqrt{20p^3}}{\sqrt{4 \cdot 5 \cdot p^2 \cdot p}}$$

$$\boxed{2p\sqrt{5p}}$$

$$2) \frac{\sqrt{63}}{\sqrt{9 \cdot 7}}$$

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

$$3) \frac{\sqrt{28}}{\sqrt{4 \cdot 7}}$$

$$\boxed{2\sqrt{7}}$$

$$4) \frac{\sqrt{216}}{\sqrt{36 \cdot 6}}$$

$$\boxed{6\sqrt{6}}$$

$$5) \frac{\sqrt{245}}{\sqrt{5 \cdot 49}}$$

$$\boxed{7\sqrt{5}}$$

$$6) \frac{\sqrt{80x^2yz^4}}{\sqrt{16 \cdot 5 \cdot x^2 \cdot y \cdot z^4}}$$

$$\boxed{4xz^2\sqrt{5y}}$$

$$7) \frac{\sqrt{100a^3b^3c^2}}{\sqrt{100a^2ab^2bc^2}}$$

$$\boxed{10abc\sqrt{ab}}$$

$$8) \frac{\sqrt{72p^4}}{\sqrt{36 \cdot 2p^4}}$$

$$\boxed{6p^2\sqrt{2}}$$

$$9) \frac{\sqrt{27x^3}}{\sqrt{9 \cdot 3 \cdot x^2 \cdot x}}$$

$$\boxed{3x\sqrt{3x}}$$

$$10) \frac{\sqrt{128x^4y^4}}{\sqrt{64 \cdot 2 \cdot x^4 \cdot y^4}}$$

$$\boxed{8x^2y^2\sqrt{2}}$$

$$11) -4\sqrt{147x^3}$$

$$-4\sqrt{49 \cdot 3x^2 \cdot x}$$

$$-4 \cdot 7x\sqrt{3x}$$

$$\boxed{-28x\sqrt{3x}}$$

$$12) -2\sqrt{320mn^2}$$

$$-2\sqrt{64 \cdot 5 \cdot mn^2}$$

$$-2 \cdot 8n\sqrt{5m}$$

$$\boxed{-16n\sqrt{5m}}$$

13)  $-7\sqrt{384}$   
 $-7 \cdot 2 \cdot 2 \cdot 2 \sqrt{6}$   
 $\boxed{-56\sqrt{6}}$

384  
 2 192  
 2 96  
 16 6  
 44 (32)  
 2222

14)  $2\sqrt{245h^4jk^2}$   
 $2\sqrt{49 \cdot 5h^4jk^2}$   
 $2 \cdot 7h^2k\sqrt{5j}$   
 $\boxed{14h^2k\sqrt{5j}}$

15)  $\sqrt[7]{256x^6y}$   
 $\boxed{2\sqrt[7]{2x^6y}}$

256  
 16 16  
 44 44  
 2222 (32)

16)  $\sqrt[3]{-320a^4b^7c^5}$   
 $-1 \cdot 2 \cdot 2ab^2c\sqrt[3]{5abc^2}$   
 $\boxed{-4ab^2c\sqrt[3]{5abc^2}}$

320  $a^4b^7c^5$   
 10 32  
 2 8 4  
 2222

17)  $\sqrt[3]{32m^6n^8p^7}$   
 $\sqrt[3]{8 \cdot 4m^6n^6p^6}$   
 $\boxed{2m^2n^2p^2\sqrt[3]{4n^2p}}$

18)  $\sqrt[4]{96x^7y^4z^4}$   
 $\boxed{2xyz\sqrt[4]{6x^3}}$

96  
 16 6  
 2222 (32)  
 ~~$x^4y^3z^4$~~

19)  $\sqrt[3]{48a^6b^4c^2}$   
 $\boxed{2a^2b\sqrt[3]{6bc^2}}$

48  
 8 6  
 $a^6b^3bc^2$

20)  $\sqrt[4]{243b^7}$   
 $\boxed{3b\sqrt[4]{3b^3}}$

243  $b^4b^3$   
 9 27  
 33 3 9  
 33 (3)

21)  $\sqrt[4]{486r^7}$   
 $\boxed{3r\sqrt[4]{6r^3}}$

486  
 (2) 243  $r^4r^3$   
 9 27  
 33 33 (3)

22)  $\sqrt[3]{448}$   
 $2 \cdot 2 \sqrt[3]{7}$   
 $\boxed{4\sqrt[3]{7}}$

448  
 16 28  
 2222 (7) 22

23)  $\sqrt[4]{64a^5b^8c^8}$   
 $\boxed{2ab^2c^2\sqrt[4]{4a}}$

64  
 8 8  
 2222 (2)  
 $a^4b^8c^8$

24)  $\sqrt[5]{-256m^3n^3p^2}$   
 $-1 \cdot 2 \sqrt[5]{8m^3n^3p^2}$   
 $\boxed{-2\sqrt[5]{8m^3n^3p^2}}$

256  
 16 16  
 2222 2222