

Math 20- 2**Radicals Worksheet**

Show your work!!!

1. Write each of the following as an entire radical. (1 mark each)

a) $3\sqrt{2}$

b) $4\sqrt[3]{7}$

c) $3\sqrt[4]{7}$

2. Write as a mixed radical. (1mark each)

a) $\sqrt{32}$

b) $7\sqrt{48}$

c) $-\sqrt[3]{27}$

d) $2\sqrt[3]{128}$

3. Determine an equivalent form for each expression. (2 marks each)

a) $\sqrt{24} + \sqrt{48}$

b) $5\sqrt{80} + \sqrt{162} - 2\sqrt{45} + 3\sqrt{5}$

c) $\sqrt[3]{162} + \sqrt[3]{48} - \sqrt[3]{16}$

d) $-\sqrt[3]{27} + \sqrt[3]{72}$

4. Multiply or Divide. Simplify wherever possible. (2 mark each)

a. $3\sqrt{5} \times 4\sqrt{8}$

b. $(5\sqrt{2} - 2\sqrt{6})^2$

c. $(\sqrt{2} + \sqrt{5})(3\sqrt{6} - 2\sqrt{10})$

d. $\frac{2\sqrt{30}}{\sqrt{8}}$

e. $\frac{4\sqrt{2} - 10\sqrt{6}}{2\sqrt{3}}$

f. $\frac{12\sqrt{60} - 15\sqrt{40}}{3\sqrt{5}}$

5. Simplify. (2 marks each)

$$a) 2\sqrt{45x^4}$$

$$b) 2\sqrt{12x^3}$$

$$c) \sqrt{9x^5} + \sqrt{36x^5}$$

$$d) -3x\sqrt{8x^7} - 4\sqrt{2x^9}$$

$$e) (2\sqrt{x})(3\sqrt{x^3})$$

$$f) \sqrt{x^3}(2\sqrt{x} - \sqrt{x^5})$$

6. Solve.

a) $\sqrt{x} = 7$

b) $\sqrt{2x} + 5 = 13$

c) $5\sqrt{x} = 15$

d) $2\sqrt{x+3} + 1 = 11$