Pg 229 #1-6acf, 8, 9, 12acf, 14, 18

1. a) $\sqrt{49} = 7$ c) $\sqrt[3]{-125} = -5$ f) $-\sqrt{144} = -12$

2. a) $512^{\frac{1}{9}} = 2$ c) $27^{\frac{2}{3}} = 9$ f) $\left(\frac{16}{81}\right)^{-\frac{1}{4}} = \frac{2}{3}^{-1}$

3. a) 8^1 c) $(-11)^{\frac{11}{4}}$ f) $\frac{10^{-\frac{11}{15}}}{10^{\frac{10}{15}}} = 10^{-\frac{21}{15}} = 10^{-\frac{7}{5}}$

4. a) 5^1 b) $\sqrt{\frac{-4\frac{2}{5}}{2\frac{1}{3}}} = \sqrt{2\frac{1}{4} \times 2}^{\frac{4}{3}} = \frac{-24}{2\frac{1}{3}}^{\frac{4}{3}} = \frac{-2\frac{4}{3}}{2\frac{1}{3}} = -2$ c) $\frac{25\sqrt{4}}{\sqrt{7}} = \frac{3}{2}$

$= \sqrt{7} \times 25\sqrt{4}$

$= 25\sqrt{7}\ 4$

5. a) $\sqrt{49} + \sqrt{16} = 7 + 4 = 11$

b) $3\sqrt{27^2} - 4\sqrt{81^3} = 3\sqrt{729} - 4\sqrt{531,441} = 9 - 27 = -18$

f) $= \sqrt{81} + 2 - (2^5)^{\frac{4}{5}} + (2^4)^{\frac{3}{4}}$

$= 9 + 2 - 2^4 + 2^3$

$= 11 - 16 + 8$

$= 1$

6a) $4^{\frac{1}{3}}(4^{\frac{3}{10}}) = 4^{\frac{1}{2}} = \sqrt{4} = 2$

c) $= 64^{\frac{1}{3}} = \sqrt[3]{64} = 4$

f) $\frac{8^{-5}}{8^{-\frac{3}{2}}} = 8^{-\frac{7}{2}} = -7\sqrt{8^7} = -7\sqrt{64}$

8. $\sqrt[3]{0.015625} = 0.015625^{\frac{1}{3}} = 0.25_{m}$

9. The one using the fraction is exact

12. a) $= -256^{-\frac{3}{8}} = (-2^8)^{-\frac{3}{8}} = -2^3 = -8$

c) $-0.027^{\frac{4}{3}} = (-0.03^3)^{\frac{4}{3}} = 0.003^4 = 0.000000000081$

f) $\sqrt[8]{-7776^8} = 16796\,16$

14. a) False b) False c) false d) True e) false f) True

18. a) $\sqrt{\frac{1}{16}} - \frac{2}{3} = x$

$\frac{1}{2} - \frac{2}{3} = x$

$\frac{3}{6} - \frac{4}{6} = x$

$-\frac{1}{6} = x$

b) $\frac{1}{2} - x + 15 = 2$

$-x = -13\frac{1}{2}$

$x = \frac{27}{2}$