MORE ON POWER & RADICALS

Thu 25 APR 2019

p408 7) Simplify & write as a power w/ positive exponent [try as many ≠ ways as you can]

a) $$\frac{11^{-2}\left(11^{3}\right)}{\left(11^{-2}\right)^{4}} = \frac{11^{-2+3}}{11^{(-2)4}} = \frac{11}{11^{-8}} = 11^{1-(-8)} = 11^{9}$$

b) $$\left(\frac{9^{2}}{(9^{2})^{2}}\right)^{2} = \left(\frac{9^{2}}{9^{4}}\right)^{2} = \left(9^{2-4}\right)^{2} = \left(9^{-2}\right)^{2} = 9^{(-2)^{2}-4} = 9^{4} = \frac{1}{9^{4}}$$

e) $\dfrac{(-8^{-1})(-8^{-5})}{(-8^{2})^{3}} = \dfrac{[-(8^{-1})]\cdot[-(8^{-5})]}{[-(8^{2})^{3}]} = \dfrac{8^{-1-5}}{[-8^{(-2)\cdot 3}]} = \dfrac{8^{-6}}{-8^{-6}} = -1$

8) e) $\dfrac{-2(-2^{-3})}{(-2)^{4}} = \dfrac{2\cdot 2^{-3}}{2^{4}} = \dfrac{2^{1-3}}{2^{4}} = \dfrac{2^{-2}}{2^{4}} = 2^{-2-4} = 2^{-2} = \dfrac{1}{2^{2}}$