Answer key, HWC6.8

Complete the following problems to review for your test.

Simplify. Your answer should contain only positive exponents.

17) $\dfrac{4y^{-1}}{-4x^4y^{-4}\cdot -3x^2}$ $\dfrac{4y^{-1}}{12x^6y^{-4}} = \dfrac{4y^3}{12x^6}$ $= \dfrac{y^3}{3x^6}$

18) $\left(\dfrac{2a^3b^3}{-2a^4b^0}\right)^4 = \dfrac{16a^{12}b^{12}}{16a^{16}} = \dfrac{b^{12}}{a^4}$

19) a. When you breathe normally, about 12% of the air in your lungs is replaced with each breath. Write a function f(t) that models the amount of the **original** air left in your lungs at any given time, given that the initial volume of air is 500 mL.

$f(t) = 500(.88)^t$

b. How much of the original 500 mL remains after 50 breaths?

$f(t) = 500(.88)^{50} = 0.84$ mL

Simplify.

20) $\sqrt{96}$ $= 4\sqrt{6}$

21) $\dfrac{3\sqrt{28n^3}}{6n\sqrt{7n}}$

22) $-3\sqrt{2} - 2\sqrt{2}$ $-5\sqrt{2}$

23) $-5\sqrt{6}\cdot\sqrt{12}$ $-5\sqrt{72}$ $-30\sqrt{2}$

24) $\dfrac{\sqrt{10}}{5\sqrt{5}}$ $\dfrac{\sqrt{2}}{5}$

25) $-\sqrt{3} - 2\sqrt{12}$ $-\sqrt{3} - 4\sqrt{3}$ $-5\sqrt{3}$

26) $\sqrt{2}(\sqrt{3}+\sqrt{2})$ $\sqrt{6}+2$

27) $\dfrac{4\sqrt{12}}{\sqrt{15}}$ $\dfrac{4\sqrt{4}}{\sqrt{5}}$ $= \dfrac{8}{\sqrt{5}}\cdot\dfrac{\sqrt{5}}{\sqrt{5}} = \dfrac{8\sqrt{5}}{5}$

28) $\sqrt{12}\cdot -3\sqrt{3}$ $-3\sqrt{36}$ -18