Math 1010 - Quiz 8

University of Utah

Fall 2009

Name: Solutions

1. Solve the rational equation:
(6 points)

$$\frac{h+2}{5} - \frac{h-1}{9} = \frac{2}{3}.$$

$$\frac{h+2}{5} - \frac{h-1}{9} - \frac{2}{3} = 0$$

$$\Rightarrow \frac{9(h+2)}{45} - \frac{5(h-1)}{45} - \frac{15(2)}{45} = 0$$

$$\Rightarrow \frac{9h+18-5h+5-30}{45} = 0 \Rightarrow \frac{4h-7}{45} = 0$$

$$\Rightarrow 4h-7=0 \Rightarrow \boxed{h = \frac{7}{4}}$$

2. Write out the mathematical relation defined by the statement:
(3 points)

n varies inversely with m, and $n = 32$ when $m = 1.5$.

$$n = \frac{k}{m}$$

$$32 = \frac{k}{1.5} \Rightarrow 32(1.5) = k$$

$$\Rightarrow 48 = k. \quad \text{So,} \quad \boxed{n = \frac{48}{m}}$$

3. What is the domain of the function: $\sqrt[3]{x}$?
(2 points)

3 is odd, so

All real numbers.

4. Evaluate the expression:
(in other words, write is as simply as possible)
(4 points)

$8^{-\frac{2}{3}}$

$8^{-2/3} = \frac{1}{8^{2/3}} = \frac{1}{(\sqrt[3]{8})^2}$

$= \frac{1}{2^2} = \boxed{\frac{1}{4}}$