Module 3 covers section R.6 (Rational Expressions) and section 1.1 (Linear Equations, Formulas, and Problem Solving) of the textbook. The following problems cover the material from these two sections needed for module 3. There were really no real new rules/definitions from either of the sections I wanted to point out. I think it is best to learn the material simply through practice.

Name:_____

1. Simplify the following rational expressions

   (a) $\dfrac{5u+25}{7u^2+35u}$

Answer:_____

   (b) $\dfrac{u^2-u-12}{96-6u^2}$

Answer:_____

(c) $\dfrac{4x-8}{x^2-x-6} \cdot \dfrac{x^2+3x+2}{x-2}$

Answer:_____

(d) $\dfrac{2c}{7b^3} \div \dfrac{c^5}{14b^5c}$

Answer:_____

(e) $\dfrac{x+3}{x^2+3x+2} \div \dfrac{4x+12}{x^2-x-2}$

Answer:_____

(f) $-\dfrac{4c+9d}{5c}-\dfrac{7c-4d}{5c}$

Answer:_____

(g) $\dfrac{3y+4}{16y}+\dfrac{9y-8}{16y}$

Answer:_____

(h) $\dfrac{bu^2}{8d^3k^2}-\dfrac{3y^2}{2b^3d^2}$

Answer:_____

(i) $\dfrac{x+9}{x+5} - \dfrac{x-3}{x}$

Answer:_____

(j) $\dfrac{3}{x^2+13x-14} - \dfrac{2}{x^2+18x+56}$

Answer:_____

(k) $\dfrac{\dfrac{3x^4}{x-7}}{\dfrac{7x}{4x-28}}$

Answer:_____

2. Solve the following equations and simplify your answer as much as possible

(a) $-5(3x-6)+7x=4(x+8)$

Answer:_____

(b) $\dfrac{x-8}{2}+\dfrac{6x+1}{7}=7$

Answer:_____

(c) $-6(w+1)=2(1-3w)-8$

Answer:_____

(d) $2(v+2)+v=3(v-1)+6$

Answer:_____

3. Lastly, let's do some word problems

   (a) Translate the following sentence into an equation: The difference of a number divided by 8 and 5 is equal to 6

Answer:_____

   (b) Pamela's age is two times Jiri's age. The sum of their ages is 36. What is Jiri's age?

Answer:_____

(c) A Web music store offers two versions of a popular song. The size of the standard version is 2.3 megabytes (MB). The size of the high-quality version is 4.4 MB. Yesterday, the high-quality version was downloaded three times as often as the standard version. The total size downloaded for the two versions was 3720 MB. How many downloads of the standard version were there?

Answer:_____

(d) Two trains leave the station at the same time, one heading east and the other west. The eastbound train travels 10 miles per hour faster than the westbound train. If the two trains are 640 miles apart after 4 hours, what is the rate of the eastbound train?

Answer:_____

(e) An item is regularly priced at \$55. It is now priced at a discount of 75% off the regular price. Determine the discounted price.

Answer:_____