MATH 115  
Test A Chapter 1-2

1. Simplify $-8 \div (\frac{-2}{3}) - 3(\frac{3}{2}) - 10$
   $\frac{4}{1} - \frac{18}{1} - 10$
   $\frac{4}{1} - 12$
   $\frac{-8}{1}$

2. Simplify $15 + 65 \div 5 + 3(6 - 2)$
   $15 + 13 + 12$
   $40$

3. Find the least common multiple of 42 and 24.
   $24 \div 2 \cdot 3 \cdot 2 \cdot 2$
   $42 \div 2 \cdot 3 \cdot 7$
   $|68$

4. Evaluate $0.4x + 0.5y - xy$ when $x = 0.1$ and $y = -0.2$
   $0.4(0.1) + 0.5(-0.2) - 0.1(-0.2)$
   $0.04 + (-0.1) + 0.02$
   $-0.04$

5. Evaluate $2x^3 - y^2$ when $x = -1$ and $y = -2$
   $2(-1)^3 - (-2)^2$
   $-2 - 4$
   $-6$

For problems 6-10, perform the indicated operation and express the answer in simplest form:

6. $\frac{1}{3} + \frac{5}{4} - \frac{7}{12}$
   $\frac{4}{12} + \frac{15}{12} - \frac{7}{12}$
   $\frac{12}{12} = 1$

7. $\frac{5}{6} \div \frac{(-35)}{3}$
   $\frac{5}{6} \cdot \frac{(-2)}{35}$
   $\frac{1}{2} \cdot \frac{-1}{7}$
   $\frac{-11}{14}$
8. \[ \frac{5x^2 + x - 2(x+3x^2)}{5x^2 + 1x - 2x + (-6x^2)} \]
   \[ = x^2 - x \]

9. \[ \frac{5}{2h} + \frac{9}{7h^2} = \frac{35h}{14h^2} + \frac{18}{14h^2} = \frac{35h + 18}{14h^2} \]

10. \[ \frac{7ab}{6} \cdot \frac{12b^4}{7a} = \frac{2b^4}{1} = \frac{2b^4}{1} \]

11. Express \[ \frac{50x^3y^4}{125xy^2} \] in simplest form.
   \[ = \frac{2x^2}{5} \]

12. Simplify \[ \left( \frac{7}{12} \right)^2 \left( \frac{7}{12} - \frac{2}{3} \right) \]
   \[ = \frac{2}{5} \]

13. Simplify \[ -21 + (-4) + 8 - (-6) \]
   \[ = -25 + 8 + 6 \]
   \[ = -11 \]

14. Simplify \[ (-5)(-2)(-4) \]
   \[ = 20 \]

\[ 40 \]
15. Simplify \(8 \left(\frac{1}{2}\right)^2 - 9 \left(\frac{2}{3}\right)^2\)
\[
8 \left(\frac{1}{2}\right)^2 - 9 \left(\frac{2}{3}\right)^2 = 1 - \frac{36}{9} = 1 - 4
\]

16. Translate the following into an algebraic expression.
"five less than three times \(x\)"
\[3 \cdot x - 5\]

17. Susan has \(n\) nickels, \(d\) dimes, and \(q\) quarters. How much money, in cents, does she have?
\[5n + 10d + 25q = \_\]

18. Jane is \(y\) years old and her sister is four years older than Jane. What represents the sum of their ages?
\[y + (y + 4) = 2y + 4\]

19. Find the value of \((-2)^2\) and \(-2^2\)
\[-2 \cdot -2 = 4\]
\[-(2 \cdot 2) = -4\]

20. Express 210 as a product of prime factors.
\[210 = 2 \cdot 3 \cdot 5 \cdot 7\]