The problem list is similar to problems found on the indicated pages.

**Pages 204-205 Combine the following terms into a single fraction.**

1) \( \frac{3}{4x} + \frac{7a}{4} + 2 \)

2) \( \frac{6}{5x^3} + \frac{a}{25x} \)

3) \( \frac{x}{2x-6} + \frac{1}{4} - \frac{3x}{4x-12} \)

4) \( \frac{x-1}{3x^2-13x+4} - \frac{3x+1}{4-x} \)

**Pages 209-210 Solve for x using the method of multiplication by LCD.**

5) \( 1 - \frac{x-5}{6} = \frac{3}{4} \)

6) \( \frac{3x}{7} - \frac{5}{21} = \frac{2-x}{14} \)

7) \( \frac{1}{4x} + \frac{3}{2x} = \frac{2}{x+1} \)

8) \( S = \frac{P}{A} + \frac{Mc}{I} \) Solve for A
Page 225  analytically – Determine the value(s) of the root(s) of the following equation using the quadratic formula.

9a) \( x^2 + 2x + 2 = 0 \)

10a) \(-2x^2 - 6x + 8 = 0\)

11a) \(x(2x - 12) = -18\)

Page 229-230 graphically – Determine the value(s) of the root(s) of the following equation, the y-intercept, and location of the vertex using graphical techniques. Locate the appropriate positions on the graph.

9b) \( y = x^2 + 2x + 2 \)

10b) \( y = -2x^2 - 6x + 8 \)

11b) \( y = 2x^2 - 12x + 18 \)

Page 111 # Angles

12) Draw the given angles inside a circle.
\[ \theta = 20^\circ, \quad \theta = 100^\circ, \quad \theta = 200^\circ, \quad \theta = 300^\circ \]

13) Determine one positive and one negative coterminal angle for the given angle.
\[ \theta = 20^\circ, \quad \theta = 100^\circ, \quad \theta = 200^\circ, \quad \theta = 300^\circ \]

14) Convert the following angles from radians to degrees
\[ \theta = 20^\circ, \quad \theta = 100^\circ, \quad \theta = 200^\circ, \quad \theta = 300^\circ \]

15) Convert the following degrees from radians to angles
\[ \theta = 1 \text{ rad.}, \quad \theta = 2 \text{ rad.}, \quad \theta = 4 \text{ rad.}, \quad \theta = 6 \text{ rad.} \]
16) The given angles are in standard position. Identify the quadrant in which the terminal side of the angle lies. Note: if $\theta = 0, 90^\circ, 180^\circ, 270^\circ, 360^\circ$ etc., the angle is called a quadrantal angle.

$$\theta = 20^\circ, \quad \theta = 100^\circ, \quad \theta = 200^\circ, \quad \theta = 300^\circ$$

17) Draw angles in standard position such that the terminal side passes through the given point. Identify the quadrant in which the terminal side of the angle lies.

$$(1,2), \quad (-1,2), \quad (-1,-2), \quad (1,-2)$$

Page 115 Defining the trig functions

18) Find the values of the six trig functions of the angle (in standard position) whose terminal side passes through the given points.

$$(1,2), \quad (0,2), \quad (2,0), \quad (3,4)$$

19) Given one trig function, find some of the others by extracting the implied triangle.

Given $\cos \theta = \frac{\sqrt{3}}{2}$, find $\sin \theta$ and $\cot \theta$.

Given $\sin \theta = \frac{5}{13}$, find $\sec \theta$ and $\csc \theta$.

Given $\tan \theta = 1.0$, find $\sin \theta$ and $\cos \theta$.

Given $\cot \theta = \frac{12}{5}$, find $\sin \theta$ and $\cos \theta$. 
Page 118-119  Values of trig functions and inverse trig functions.

20) Using inverse trig functions, find $\theta$ for each given trig function.

Find $\theta$ for $\cos\theta = \frac{\sqrt{3}}{2}$

Find $\theta$ for $\sin\theta = \frac{5}{13}$

Find $\theta$ for $\tan\theta = 1.0$

Find $\theta$ for $\cot\theta = \frac{12}{5}$

21) Using inverse trig functions, find $\cos\theta$, given $\cos\theta$

Given $\cos\theta = \frac{\sqrt{3}}{2}$, find $\sin\theta$ and $\cot\theta$.

Given $\sin\theta = \frac{5}{13}$, find $\sec\theta$ and $\csc\theta$.

Given $\tan\theta = 1.0$, find $\sin\theta$ and $\cos\theta$.

Given $\cot\theta = \frac{12}{5}$, find $\sin\theta$ and $\cos\theta$.

Page 123 Solving right triangles

22) Solve the right triangle for the missing angle(s) and side(s).

$A = 53.13^\circ \quad a = 8$

$B = 36.87^\circ \quad c = 10$

$a = 10 \quad c = 26$

$a = 10 \quad b = 24$