6 Solve for $x$ and check the result:
$$3\sqrt{x} - \sqrt{9x - 32} = \frac{8}{\sqrt{9x - 32}}$$ [12½]

7 Given the progression $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}, \ldots$; find by using a formula the number of terms necessary to make the sum $\frac{211}{16}$. [12½]

8 If $a = .0647$, $b = 2.576$, $c = 101.35$ and $d = .4007$, find by logarithms the value of $y$ from the formula
$$\frac{1}{2}y = \frac{\sqrt{a + b}}{c + d}$$ [12½]

9 Solve the following set of equations, group the results and check one pair of answers:
$$7x - 4y = 2$$
$$2x^2 - 3x + 2y = 8$$ [12½]

10 A merchant invested $399$ in flour. When the price of flour had risen $1$ a barrel, he obtained 4 barrels less for the same sum. How many barrels did he buy the first time? [12½]

11 Make a graph of each of the following equations and from the graphs determine the common solutions:
$$x^2 + 4y^2 = 36$$
$$2y - x = 6$$ [12½]