17. Express $x\%$ of 8 plus $y\%$ of 4 as a percentage of 11.

22. Solve: $x + y - 2z = 0$, $3x + y = 1$, $5x + 3y + 7z = 2$. (Hint: eliminate the unknowns one by one.)

31. Simplify the fraction. Write your solution such that the variables appear in alphabetical order:
$$\frac{abc^3 + ab^3c + a^3bc}{a^2 + b^2 + c^2}.$$

41. Express x in terms of s and t: $(s^2 - t^2)x = (s + t)(x + 1)$.

51. A circle and a square have the same area. Find the length of the diagonal of the square divided by the radius of the circle. (Hint: draw a diagram and label unknowns.)

56. When an object of mass m moving with velocity v collides with an object of mass M moving with velocity V and sticks to it, then the law of conservation of momentum states that

$$mv + MV = (m + M)u.$$

where u is the final velocity of the combined object. Solve this equation for m in terms of the other quantities. (This equation gives the recoil when you fire a gun.)

80. A rectangular box has dimensions 12 by 16 by 21. Find the length of the diagonal connecting a pair of opposite corners. (Hint: You will use Pythagoras' Theorem twice.)