

Answer on Question #47605 - Math - Algebra

In a college four-ninths of all employees are faculty and the ratio of the faculty to support staff is 5:4. How many people does the college employ if the support staff numbers 192?

Solution.

There is a contradiction in terms: if $\frac{\text{faculty}}{\text{support}} = \frac{5}{4}$ then faculty are $\frac{5}{9}$ of all employees (not $\frac{4}{9}$).

There are 2 options:

- 1) $\frac{\text{faculty}}{\text{support}} = \frac{5}{4} \rightarrow \text{faculty} = \frac{5}{4} \text{ support} = \frac{5}{4} * 192 = 240.$
- 2) $\frac{\text{faculty}}{\text{support}} = \frac{4}{5} \rightarrow \text{faculty} = \frac{4}{5} \text{ support} = \frac{4}{5} * 192 = 153.6. - \text{impossible.}$

Thus, it must be option 1) – *number of faculty* = 240.