Answer on Question #49358 – Math - Algebra

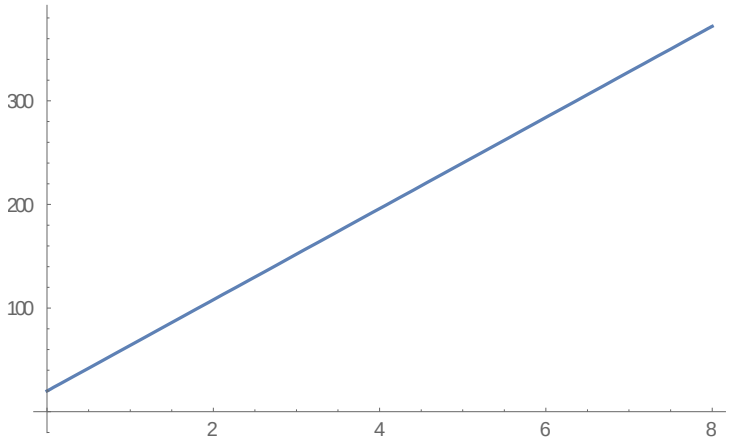
The time t (in minutes) for which a turkey should be cooked in the oven is given by
$t = 44m + 20$

(a) Draw the graph of t for the values $0 < m < 8$
(b) For how long should a turkey of mass 6.6 kg be cooked?
(c) A turkey was cooked for 2 hours and 25 mins, what was its mass?
(d) What are the masses of turkeys whose cooking times are between 4 and 5 hours?

Commentary: (a) seems to be incorrect, because m is supposed to be positive, then t should be greater than 20, not $0 < t < 8$. We change to $0 < m < 8$

Solution

(a) For the values $0 < m < 8$, t will be between $20 < t < 372$ minutes.



(b) A turkey of mass 6.6 kg will be cooked for $t = 44*6.6 + 20 = 310.4$ minutes or 5 hours and 10.4 minutes.
(c) If turkey was cooked for 2 hours and 25 mins, its mass was:
$145 = 44*m + 20$
$44m = 125$
$m = 2.84$ kg.
(d) The turkeys whose cooking times are between 4 and 5 hours (i.e. $240<44m + 20<300$) have masses between:
$(240 - 20)/44 < m < (300 - 20)/44$
$220/44 < m < 280/44$
$5 < m < 6.36$