Dagens teman

- Linjära ekvationer av ordning 1.   (ZC 2.3)

- Litet om modellering

OBS!

Glöm inte att anmäla dig till tentan
den 14 april
om du vill skriva den.

Tentamensanmälan skall göras senast
den 31 mars
och sker via "Mina sidor"

Linjära ekvationer (ZC 2.3)

$$y'(x) + P(x)\, y(x) = f(x) \qquad (*)$$

Lösningsförfarande:
 ("integrerande-faktor-metoden")

1. Multiplicera ekv (*) med faktorn

$$k(x) = \exp\left(\int^{x} P(t)\, dt \right)$$

Vänster led i ekvationen kommer då, eftersom
$$k'(x) = k(x)\, P(x),$$
 att ha formen
$$k(x) y'(x) + k'(x)\, y(x) = (k(x)\, y(x))'$$

2. Integration av ekvationen
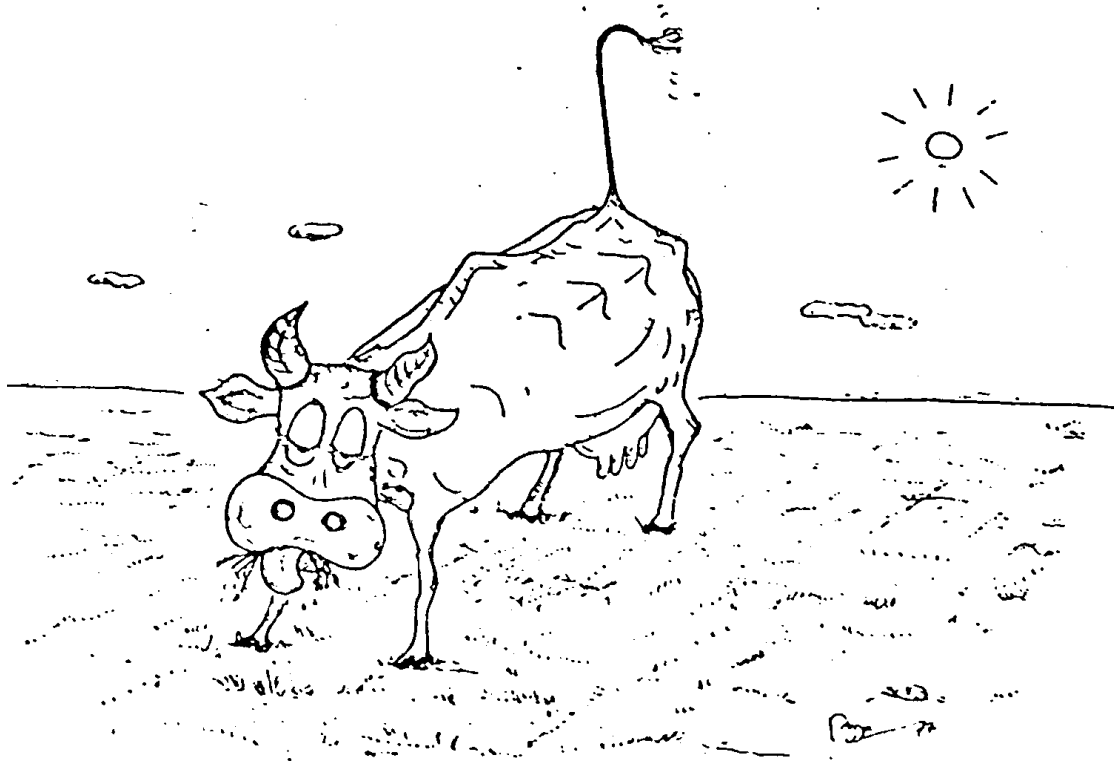$$(k(x)\, y(x))' = k(x)\, f(x)$$
 ger sedan
$$y(x) = \frac{1}{k(x)} \int^{x} k(t)\, f(t)\, dt$$

Betet i hagen

Betet i hagen räcker tre dagar för sex kor och sju dagar för tre kor.

Hur många dagar räcker betet för en ko?

The Blind Men and the Elephant

It was six men from Industan
　　To learning much inclined,
Who went to see the Elephant
　　(Though all of them were blind),
That each by observation
　　Might satisfy his mind.

The First approached the Elephant
　　And happening to fall
Against its broad and sturdy side,
　　At once began to bawl:
"God bless! but the Elephant
　　Is very like a wall!"

The Second, feeling at the tusk,
　　Cried, "Ho! what have we here
So very round and smooth and sharp?
　　To me 'tis mighty clear
This wonder of an Elephant
　　Is very like a spear!"

The Third approached the animal
　　And happening to take
The squirming trunk within his hands,
　　Thus boldly up and spake:
"I see," quoth he, "the Elephant
　　Is very like a Snake!"

The Fourth reached out an eager hand,
　　And felt about the knee.
" What most this wondrous beast is like
　　Is mighty plain," quoth he;
" 'Tis clear enough the Elephant
　　Is very like a tree!"

The Fifth who chanced to touch the ear,
　　Said: " E'en the blindest man
Can tell what this resemblesmost;
　　Deny the fact who can,
This marvel of an Elefant
　　Is very lika a fan!"

The Sixth no sooner had begun
　　About the beast to grope,
Then, seizing on the swinging tail
　　That fell within his scope,
" I see," qouth he, " the Elephant
　　Is very like a rope!"

And so this men of Industan
　　Disputed loud and long.
Each in his own opinion
　　Exceeding stiff and strong,
Though each was partly in the right
　　And all were in the wrong!

John Godfrey Saxe (1816-1887)