DfyQ
MAP2302

Quizzes Q 19Nov2014

Abbrevs. WLOG: '*Without loss of generality*'. IFF: '*if and only if*'. TFAE: '*The following are equivalent*'. ITOf: '*In Terms Of*'. OTForm: '*of the form*'. FTSOC: '*For the sake of contradiction*'. And ※ ="Contradiction".

IST: '*It Suffices to*' as in ISTShow, ISTExhibit.

Use w.r.t: '*with respect to*' and s.t: '*such that*'.

Latin: e.g: *exempli gratia*, '*for example*'. i.e: *id est*, '*that is*'. N.B: *Nota bene*, '*Note well*'. inter alia: '*among other things*'. QED: *quod erat demonstrandum*, meaning "end of proof".

C-Bonus: Wed. 19 Nov Operators $\mathsf{V}, \mathbf{P}, \mathbf{Q}, \mathbf{R}, \mathbf{S}$ map from $\mathbf{C}^\infty \to \mathbf{C}^\infty$, and V is linear. The other maps are

$$\mathbf{P}(f) := [t \mapsto f(t)+3], \quad \mathbf{Q}(f) := [t \mapsto f(t+3)],$$
$$\mathbf{R}(f) := [t \mapsto f(f(t))], \quad \mathbf{S}(f) := \mathsf{V}(\mathsf{V}(f)),$$

Then... **P** *is linear:* T F. **Q** *is linear:* T F.
R *is linear:* T F. **S** *is linear:* T F.

Hi. Rewritten, the-above operator **P** is $\mathbf{P}(f) := 3 + f$.
The-above **Q** is what familiar operator?
The-above operator **R** is $\mathbf{R}(f) := f \circ f$.
The-above operator **S** is $\mathbf{S} := \mathsf{V} \circ \mathsf{V}$. □

Compare the preceding question with the Exam-C TF*-question, and its solution, below:*

C1c DiffOperators **P**, **Q**, **R**, **S** are defined by

$$\mathbf{P}(f) := f(4) \cdot f', \quad \mathbf{Q}(f) := \cos(4) \cdot f^{(4)},$$
$$\mathbf{R}(f) := [\cos(4) \cdot f] + f'', \quad \mathbf{S}(f) := \cos(4) + [4f'].$$

Then... **P** *is linear:* T F. **Q** *is linear:* T F.
R *is linear:* T F. **S** *is linear:* T F.

Below, a quiz symbol such as **Q1.4** *refers to* **Quiz 1** *of the* 4^{th}*-period class.*

Q1.4: Mon. 01 Dec The Laplace transform of the function $f(t) := \mathbf{H}(t-2) - 3$

is $\widehat{f}(s) =$ ______________________ .

Q1.5: Mon. 01 Dec The Laplace transform of the function $f(t) := 5 + \mathbf{H}(t-4)$

is $\widehat{f}(s) =$ ______________________ .

Q2: Mon. 08 Dec Gamma fnc: $\mathbf{\Gamma}(5) =$ _______ and $\mathbf{\Gamma}(\frac{5}{2}) =$ _______

For all real $x > 1$, our $\mathbf{\Gamma}()$ function satisfies recurrence relation

$\mathbf{\Gamma}(x) =$ ______________________ .

That's All, Folks!