LaTeX Exercise Sheet 2

Jon Woolf

1 Brackets and Arrays

$$\left(\frac{1 + \left.\frac{\partial f}{\partial y}\right|_{(0,0)}}{1 - \left.\frac{\partial f}{\partial x}\right|_{(0,0)}} \right)^2 .$$

$$\begin{pmatrix} 2-\lambda & 1 \\ 1 & 2-\lambda \end{pmatrix}$$

$$\begin{pmatrix} 2-\lambda & 1 \\ 1 & 2-\lambda \end{pmatrix}$$

$$\begin{pmatrix} 2-\lambda & 1 \\ 1 & 2-\lambda \end{pmatrix}$$

$$\Theta(x) = \begin{cases} 1 & \text{if } x \geq 0 \\ 0 & \text{if } x < 0. \end{cases}$$

Lemma 1.1 *Homotopy is a congruence on the category Top.*

2 Environments

Let $f\colon M \to M$ be a homeomorphism. Then the following are equivalent:

1. f has a fine sequence of filtrations.
2. f does not have any C^0 Ω-explosions.
3. $\Omega(f) = R(f)$.

$$\gamma_1(n) = T_1^n(x_1) - \sum_{j=1}^{n} T_1^{n-j}(v_1(j)). \tag{1}$$

I'm using `\verb`.

$$\begin{aligned} d[\varphi(x), \varphi(x')] &= d[\theta(x, \varphi(x)), \theta(x', \varphi(x'))] \\ &\leq d[\theta(x, \varphi(x)), \theta(x', \varphi(x))] + d[\theta(x', \varphi(x)), \theta(x', \varphi(x'))] \end{aligned}$$

P	c_P	π_P	Type	$\rho(P)$	$r(P)$
s_5^1	10110	(13425)	fo	$\{2/5\}$	1/2
s_5^2	10010	(12435)	pA	$[1/3, 1/2]$	1/3
s_5^3	10001	(12345)	fo	$\{1/5\}$	1/2

3 All things new

Let $f\colon G \to G$ be a homomorphism.

$$\begin{vmatrix} 2-\lambda & -1 \\ 3 & 1-\lambda \end{vmatrix} = \lambda^2 - 3\lambda + 5.$$

Definition
An *irrational number* is a real number which isn't rational.

Theorem 3.1 *The orbit bijects with the cosets of the stabilizer.*

Aside 1 *I didn't write this, you know.*

Theorem 3.2 (Cayley-Hamilton) *Every matrix satisfies its own characteristic equation.*

4 Labels

Theorem 3.1 is very useful. Lemma 1.1 (on page 1) is silly. There is a mistake in equation (1). Section 2 is my favourite so far. The interested reader should consult [BM] or [BH] for further details.

References

[BM] Bell, H. and Meyer, K. "Limit periodic functions, adding machines and solenoids." *J. of Dynamics and Differential Equations* **7** (1995), 409 – 415.

[BH] Bestvina, M. and Handel, M. "Train tracks for surface homeomorphisms." *Topology* **34** (1995), 109 – 140.