

Examen 4 (pratique)(Solutions)

201-015 Mise à niveau

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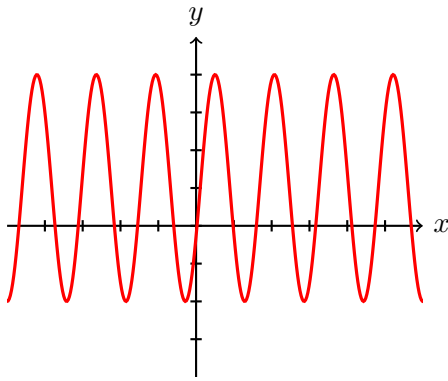
Question 1. (10%)

a) $A = 3,$

b) $T = \frac{\pi}{2},$

c) $f = \frac{2}{\pi},$

d) $\phi = \frac{\pi}{2},$

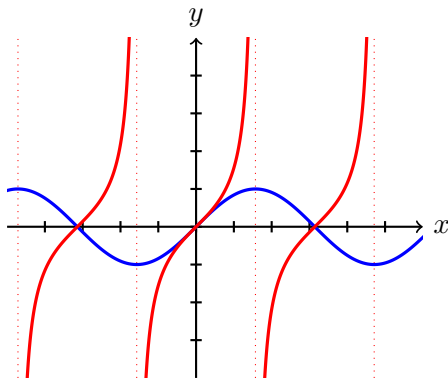


e)

Question 2. (12%)

a) $f\left(\frac{5\pi}{3}\right) = -\frac{\sqrt{3}}{2}$ et $g\left(\frac{5\pi}{3}\right) = -\sqrt{3}.$

b) $\text{dom}(f) = \mathbb{R}, \text{Im}(f) = [-1, 1],$
 $\text{dom}(g) = \mathbb{R} \setminus \left\{ \frac{\pi}{2} + k\pi, k \in \mathbb{Z} \right\}, \text{Im}(g) = \mathbb{R}$



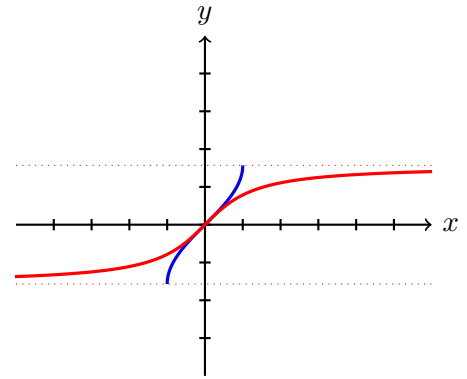
c)

Question 3. (12%)

a) $f\left(-\frac{\sqrt{2}}{2}\right) = -\frac{\pi}{4}.$

b) $g\left(\frac{\sqrt{3}}{3}\right) = \frac{\pi}{6}.$

c) $\text{dom}(f) = [-1, 1], \text{Im}(f) = \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$
 $\text{dom}(g) = \mathbb{R}, \text{Im}(g) = \left]-\frac{\pi}{2}, \frac{\pi}{2}\right[$



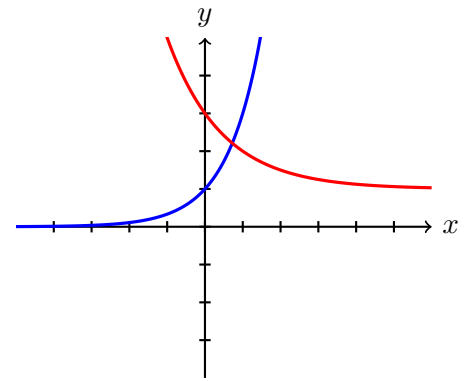
d)

Question 4. (12%)

a) $f(3) = 27.$

b) $g(6) = \frac{33}{32}.$

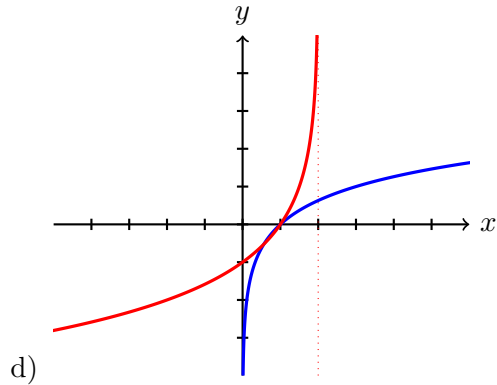
c) $\text{dom}(f) = \mathbb{R}, \text{Im}(f) =]0, \infty$
 $\text{dom}(g) = \mathbb{R}, \text{Im}(g) =]1, \infty$



d)

Question 5. (12%)

- a) $f(81) = 4$.
 b) $g(-14) = -4$.
 c) $\text{dom}(f) =]0, \infty$, $\text{Im}(f) = \mathbb{R}$
 $\text{dom}(g) = -\infty, 2[$, $\text{Im}(g) = \mathbb{R}$

**Question 9. (5%)**

$$\left(-\frac{\sqrt{10}}{2}, \frac{3\sqrt{10}}{2} \right).$$

Question 10. (10%)

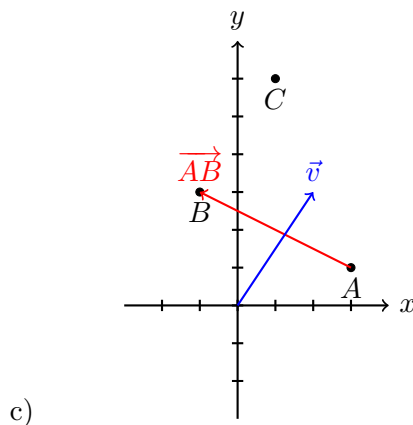
- a) $\vec{v} \cdot \vec{u} = 13$.
 b) $\arccos\left(\frac{13}{\sqrt{26}\sqrt{13}}\right)$

Question 6. (6%)

- a) $\vec{v} = 4\sqrt{2} \angle \frac{3\pi}{4}$.
 b) $\vec{u} = \left(-\frac{3}{2}, \frac{3\sqrt{3}}{2} \right)$.

Question 7. (9%)

- a) $\vec{AB} = (-4, 2)$
 b) $C(1, 6)$

**Question 8. (12%)**

- a) $\|\vec{v}\| = \sqrt{29}$.
 b) $\vec{v} + \vec{u} = (-4, 4)$.
 c) $2\vec{u} = (2, 4)$.
 d) $3\vec{u} - 5\vec{v} = (-12, 26)$.