Q36: Is $(R\cos(-t), R\sin(-t))$ a parameterization of a circle with radius R?

- Yes, I am sure
- Yes, I think so (but I am not completely sure)
- No, I don't think so (but I am not completely sure)
- No, surely not

Q37: Is $(R\cos(t), R\sin(-t))$ a parameterization of a circle with radius R?

- Yes, I am sure
- Yes, I think so (but I am not completely sure)
- No, I don't think so (but I am not completely sure)
- No, surely not

Q38: *Mean-value theorem had been presented on the board.* Claim: For the function $f(x) = \frac{1}{x}$ this theorem is true with $c = \sqrt{ab}$, with c being the geometrical average of a and b.

- That is true
- That is not true

Q39: Which partial fraction decomposition would you use for the following function: $\frac{x^3 - 23x}{(x-2)(x-8)(x^2-1)}$

- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{x-1}$
- none, you would need to perform a polynomial division first
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{(x+1)^2}$
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{CX+D}{x^2-1}$

Q40: Which partial fraction decomposition would you divide the following function: $\frac{x^3 - 23x}{(x-2)(x-8)(x^2+1)}$

- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{x-1}$
- none, you would need to perform a polynomial division first
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{(x+1)^2}$
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{CX+D}{x^2+1}$

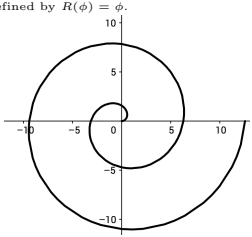
Q41: Which partial fraction decomposition would you use for the following function: $\frac{x^3 - 23x}{(x-8)(x^2+1)}$

- $\frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{x-1}$
- with none, you would need to perform a polynomial division first
- $\frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{(x+1)^2}$
- $\frac{B}{x-8} + \frac{CX+D}{x^2+1}$

Q42: Which partial fraction decomposition would you use for the following function: $\frac{x^3 - 23x}{(x-2)(x-8)(x+1)^2}$

- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{x-1}$
- none, you would need to perform a polynomial division first
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{C}{x+1} + \frac{D}{(x+1)^2}$
- $\frac{A}{x-2} + \frac{B}{x-8} + \frac{CX+D}{x^2+1}$

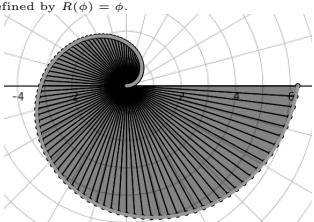
Q43: Here is a segment of the Archimedes spiral, which is defined by $R(\phi) = \phi$.



Which integral calculates the corresponding arc length?

- $\int_0^{4\pi} \sqrt{1+t^2}\,d\phi$
- $\int_0^{4\pi} \sqrt{1+\phi^2}\,d\phi$
- $\int_0^{4\pi} \sqrt{1+t^2}\,dt$
- $\int_0^{2\pi} \sqrt{\phi+\phi^2}\,d\phi$

Q44: Here is a segment of the Archimedes spiral, which is defined by $R(\phi) = \phi$.



Which integral calculates the area of the sector?

- $\int_0^{4\pi} \frac{1}{2}\phi^2\,d\phi$
- $\int_0^{4\pi} \sqrt{1+\phi^2}\,d\phi$
- $\int_\pi^{3\pi} \frac{1}{2}t^2\,dt$
- $\int_{2\pi}^{4\pi} \frac{1}{2}t^2\,dt$