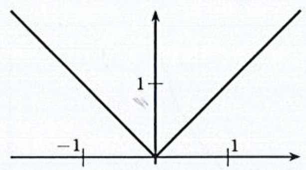
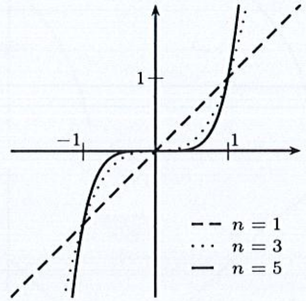
<table>
<tr>
<td>$f(x) = |x| = \begin{cases} x \text{ si } x \geqslant 0 \\ -x \text{ si } x \leqslant 0 \end{cases}$
$D = \mathbb{R}$
$f(D) = \mathbb{R}_+$</td>
<td>$f'(x) = \begin{cases} 1 \text{ si } x > 0 \\ -1 \text{ si } x < 0 \end{cases}$
f n'est pas dérivable en 0
$\int f(x)dx = C + \begin{cases} x^2 \text{ si } x \geqslant 0 \\ -x^2 \text{ si } x < 0 \end{cases}$</td>
<td><table><tr><td>x</td><td>$-\infty$</td><td></td><td>0</td><td></td><td>$+\infty$</td></tr><tr><td>$|x|$</td><td>$+\infty$</td><td>↘</td><td>0</td><td>↗</td><td>$+\infty$</td></tr></table></td>
<td></td>
</tr>
<tr>
<td rowspan="2">$f(x) = x^n \quad (n \in \mathbb{N}^*)$
$D = \mathbb{R}$
$f(D) = \begin{cases} \mathbb{R} \text{ si } n \text{ impair} \\ \mathbb{R}_+ \text{ si } n \text{ pair} \end{cases}$</td>
<td rowspan="2">$f'(x) = nx^{n-1}$
$\int f(x)dx = \frac{x^{n+1}}{n+1} + C$</td>
<td>Cas n impair.<table><tr><td>x</td><td>$-\infty$</td><td></td><td>$+\infty$</td></tr><tr><td>x^n</td><td>$-\infty$</td><td>↗</td><td>$+\infty$</td></tr></table></td>
<td></td>
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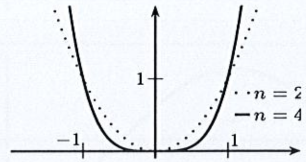
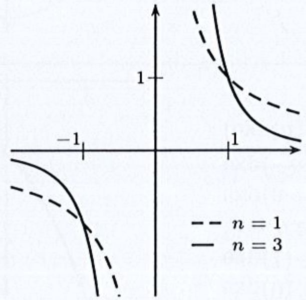
<td></td>
</tr>
<tr>
<td rowspan="2">$f(x) = x^{-n} = \frac{1}{x^n} \quad (n \in \mathbb{N}^*)$
$D = \mathbb{R}^*$
$f(D) = \begin{cases} \mathbb{R}^* \text{ si } n \text{ impair} \\ \mathbb{R}_+^* \text{ si } n \text{ pair} \end{cases}$</td>
<td rowspan="2">$f'(x) = -nx^{-n-1} = -\frac{n}{x^{n+1}}$
$\int f(x)dx = \begin{cases} \frac{x^{-n+1}}{-n+1} + C \text{ si } n \neq 1 \\ \ln(|x|) + C \text{ si } n = 1 \end{cases}$</td>
<td>Cas n impair.<table><tr><td>x</td><td>$-\infty$</td><td></td><td>0</td><td></td><td>$+\infty$</td></tr><tr><td>x^{-n}</td><td>0</td><td>↘</td><td>$-\infty$ ‖ $+\infty$</td><td>↘</td><td>0</td></tr></table></td>
<td></td>
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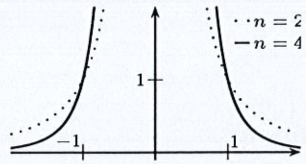
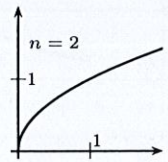
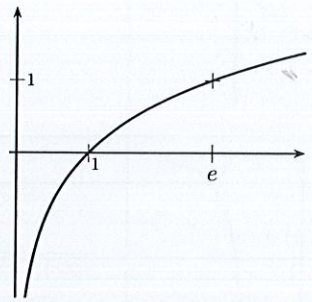
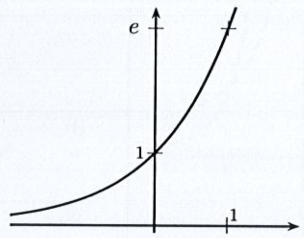
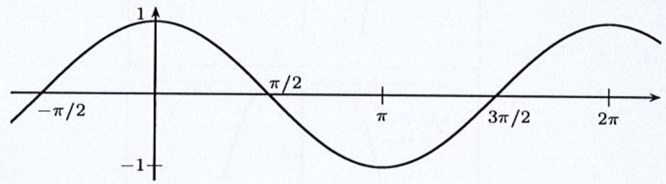
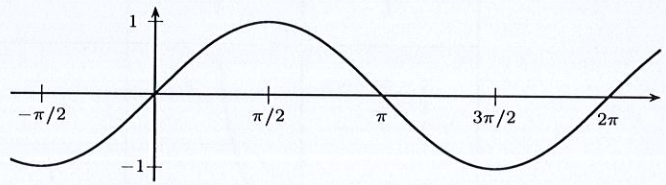
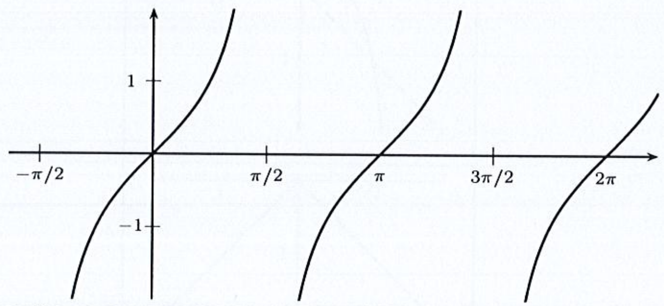
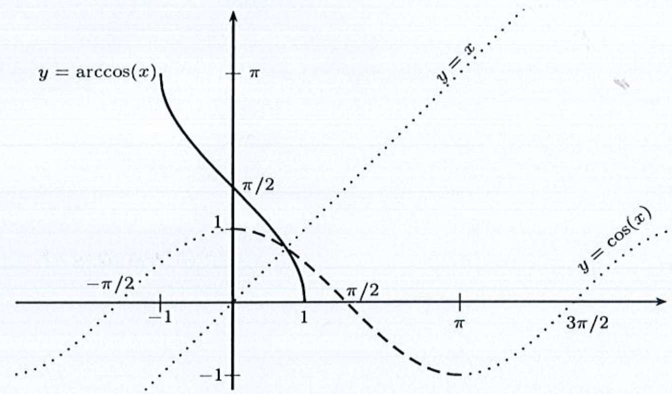
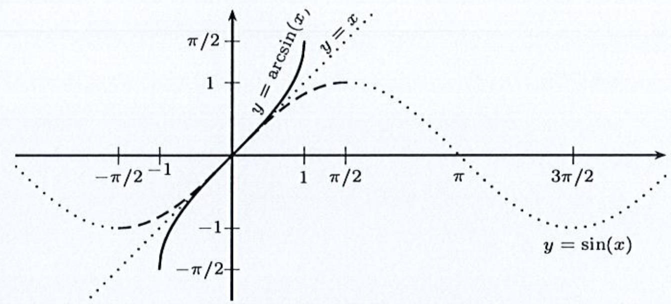
<td></td>
</tr>
<tr>
<td>$f(x) = x^{1/n} = \sqrt[n]{x} \quad (n \in \mathbb{N}^*)$
$D = \mathbb{R}_+$
$f(D) = \mathbb{R}_+$</td>
<td>$f'(x) = \frac{x^{1/n-1}}{n}$
$\int f(x)dx = \frac{nx^{1/n+1}}{n+1} + C$</td>
<td><table><tr><td>x</td><td>0</td><td></td><td>$+\infty$</td></tr><tr><td>$x^{1/n}$</td><td>0</td><td>↗</td><td>$+\infty$</td></tr></table></td>
<td></td>
</tr>
</table>

$f(x)=\ln(x)$ $D=\mathbb{R}_+^*$ $f(D)=\mathbb{R}$	$f'(x)=1/x$ $\int f(x)dx = x\ln(x)-x+C$	$\begin{array}{c\|ccc} x & 0 & & +\infty \\ \hline \ln(x) & \| \; -\infty & \nearrow & +\infty \end{array}$		$\ln 1 = 0$ $\ln e = 1$ Si $a,b>0$ et $n\in\mathbb{Z}$, $\ln(ab)=\ln a+\ln b$ $\ln(1/a)=-\ln a$ $\ln(a^n)=n\ln a$
$f(x)=\exp(x)=e^x$ $D=\mathbb{R}$ $f(D)=\mathbb{R}_+^*$	$f'(x)=\exp(x)$ $\int f(x)dx=\exp(x)+C$	$\begin{array}{c\|ccc} x & -\infty & & +\infty \\ \hline e^x & 0 & \nearrow & +\infty \end{array}$		$\exp(0)=1$ $\exp(1)=e$ Si $a,b\in\mathbb{R}$ et $n\in\mathbb{Z}$, $\exp(a+b)=\exp(a)\exp(b)$ $\exp(-a)=\frac{1}{\exp(a)}$ $(\exp(a))^n=\exp(na)$
$f(x)=\cos(x)$ $D=\mathbb{R}$ $f(D)=[-1,1]$	$f'(x)=-\sin(x)$ $\int f(x)dx=\sin(x)+C$	$\begin{array}{c\|ccccc} x & 0 & & \pi & & 2\pi \\ \hline \cos(x) & 1 & \searrow & -1 & \nearrow & 1 \end{array}$ cos est paire et 2π-périodique.		
$f(x)=\sin(x)$ $D=\mathbb{R}$ $f(D)=[-1,1]$	$f'(x)=\cos(x)$ $\int f(x)dx=-\cos(x)+C$	$\begin{array}{c\|ccccccc} x & 0 & & \pi/2 & & 3\pi/2 & & 2\pi \\ \hline \sin(x) & 0 & \nearrow & 1 & \searrow & -1 & \nearrow & 0 \end{array}$ sin est impaire et 2π-périodique.		
$f(x)=\tan(x)=\frac{\sin x}{\cos x}$ $D=\mathbb{R}\backslash\{\frac{\pi}{2}+k\pi \| k\in\mathbb{Z}\}$ $f(D)=\mathbb{R}$	$f'(x)=1+\tan(x)^2=\frac{1}{\cos(x)^2}$ $\int f(x)dx=-\ln(\|\cos(x)\|)+C$	$\begin{array}{c\|ccc} x & -\pi/2 & & \pi/2 \\ \hline \tan(x) & -\infty & \nearrow & +\infty \end{array}$ tan est impaire et π-périodique.		

$\cos(a+b)=\cos a\cos b-\sin a\sin b$
$\sin(a+b)=\sin a\cos b+\cos a\sin b$

$\cos(2x)=\cos^2 x-\sin^2 x=1-2\sin^2 x=2\cos^2 x-1$
$\sin(2x)=2\sin x\cos x$

$\cos^2 x+\sin^2 x=1$

<table>
<tr>
<td>$f(x) = \arccos(x)$
$D = [-1, 1]$
$f(D) = [0, \pi]$</td>
<td>$f'(x) = -\frac{1}{\sqrt{1-x^2}}$</td>
<td><table><tr><td>x</td><td>-1</td><td></td><td>1</td></tr><tr><td>arccos(x)</td><td>π</td><td>$\searrow$</td><td>0</td></tr></table></td>
<td>
</td>
</tr>
<tr>
<td>$f(x) = \arcsin(x)$
$D = [-1, 1]$
$f(D) = [-\pi/2, \pi/2]$</td>
<td>$f'(x) = \frac{1}{\sqrt{1-x^2}}$</td>
<td><table><tr><td>x</td><td>-1</td><td></td><td>1</td></tr><tr><td>arcsin(x)</td><td>$-\pi/2$</td><td>$\nearrow$</td><td>$\pi/2$</td></tr></table>
arcsin est impaire.</td>
<td>
</td>
</tr>
<tr>
<td>$f(x) = \arctan(x)$
$D = \mathbb{R}$
$f(D) =]-\pi/2, \pi/2[$</td>
<td>$f'(x) = \frac{1}{1+x^2}$</td>
<td><table><tr><td>x</td><td>$-\infty$</td><td></td><td>$+\infty$</td></tr><tr><td>arctan(x)</td><td>$-\pi/2$</td><td>$\nearrow$</td><td>$\pi/2$</td></tr></table>
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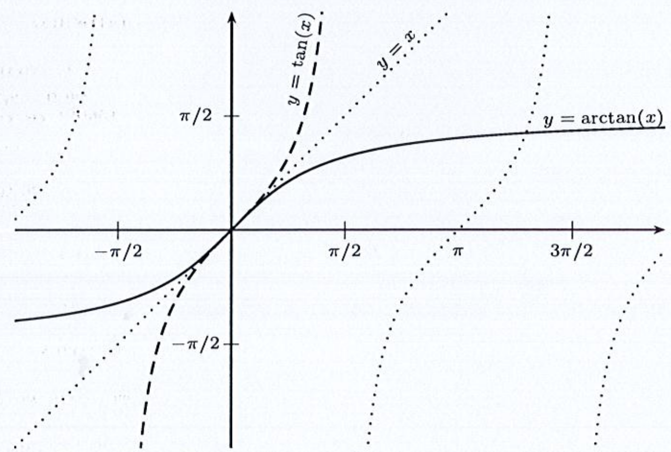
<td>
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