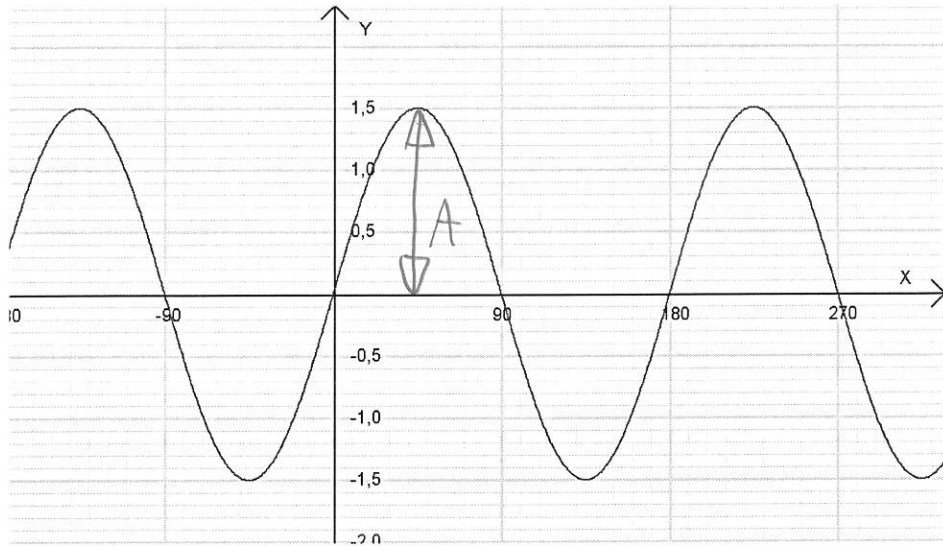


FACIT

Några uppgifter om trigonometriska funktionsgrafer

1. Ta fram funktionsuttrycken som ger graferna nedan.



a)

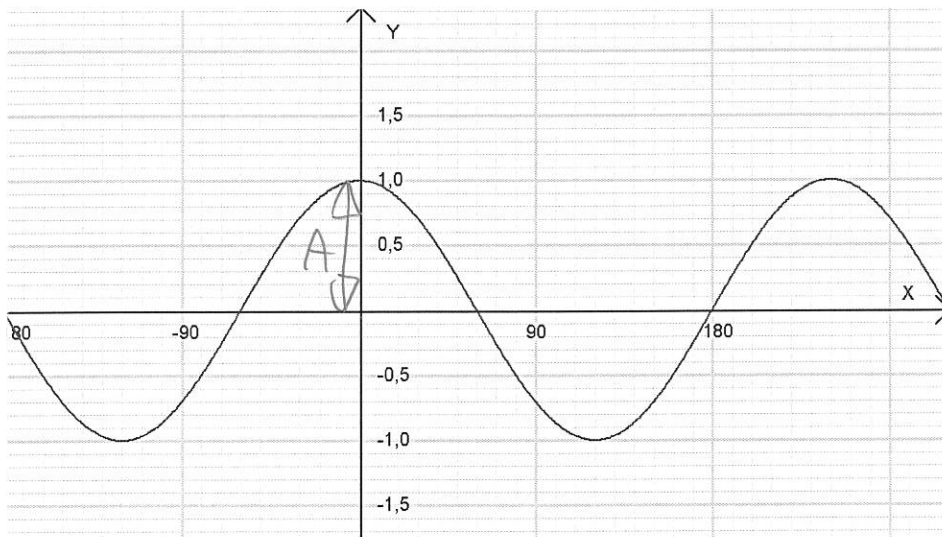
$$\begin{array}{c} \uparrow \\ \text{Graph} \Rightarrow \sin(\cdot) \end{array}$$

$$A = 1,5$$

$$P = 180^\circ \Rightarrow$$

$$k = \frac{360^\circ}{180^\circ} = 2$$

$$\boxed{1,5 \cdot \sin(2x)}$$



b)

$$\begin{array}{c} \uparrow \\ \text{Graph} \Rightarrow \cos(\cdot) \end{array}$$

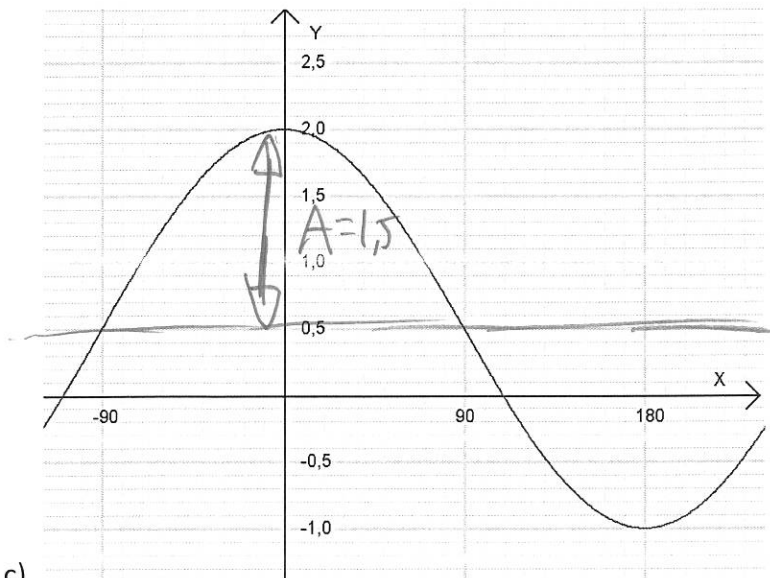
$$A = 1$$

$$\frac{3P}{4} = 180^\circ \Rightarrow$$

$$P = 240^\circ$$

$$k = \frac{360^\circ}{240^\circ} = 1,5$$

$$\boxed{1 \cdot \cos(1,5x)}$$



c)

$$\begin{array}{c} \uparrow \\ \text{Graph} \Rightarrow \cos(\cdot) \end{array}$$

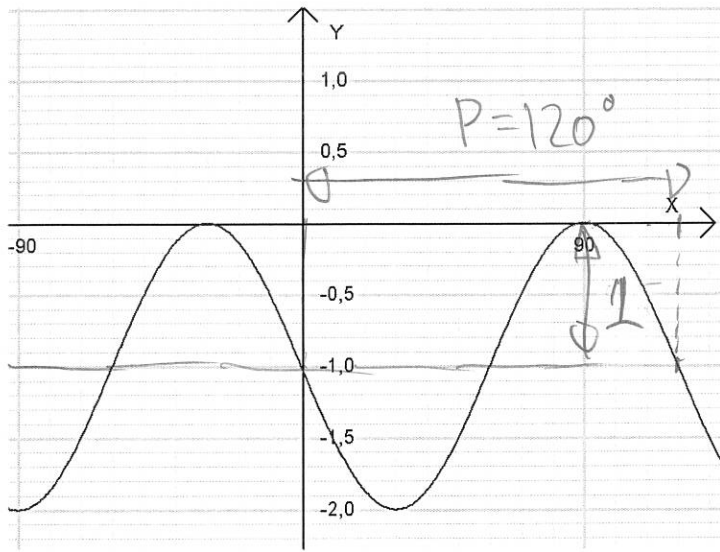
$$\text{Mittlinje: } d = 0,5$$

$$\frac{1}{2}P = 180^\circ \Rightarrow P = 360^\circ$$

$$k = \frac{360^\circ}{360^\circ} = 1$$

$$A = 1,5$$

$$\boxed{1,5 \cos(1x) + 0,5}$$



d)

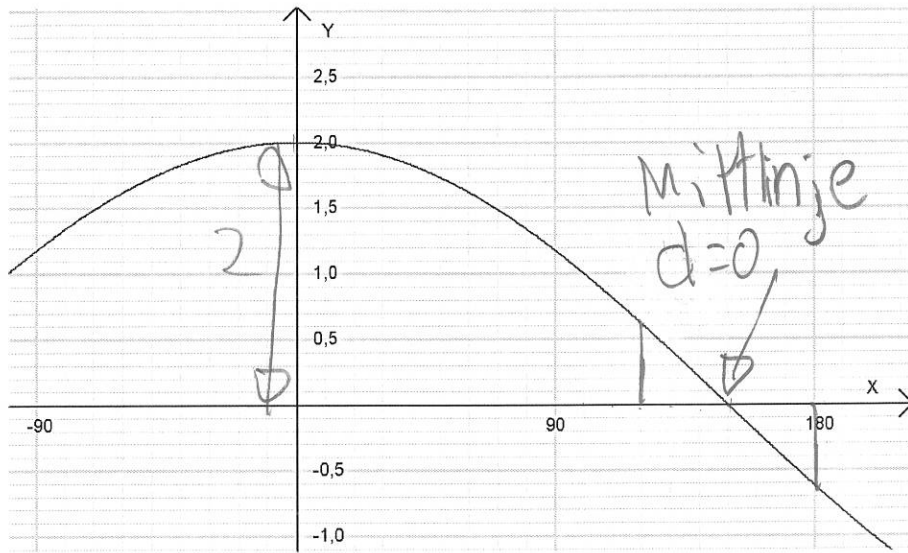
$$\uparrow \rightarrow \Rightarrow -\sin(\)$$

$$A = 1$$

$$P = 120^\circ \Rightarrow k = \frac{360}{120} = 3$$

$$\text{Mittellinie: } d = -1$$

$$\boxed{-1 \sin(3x) - 1}$$



e)

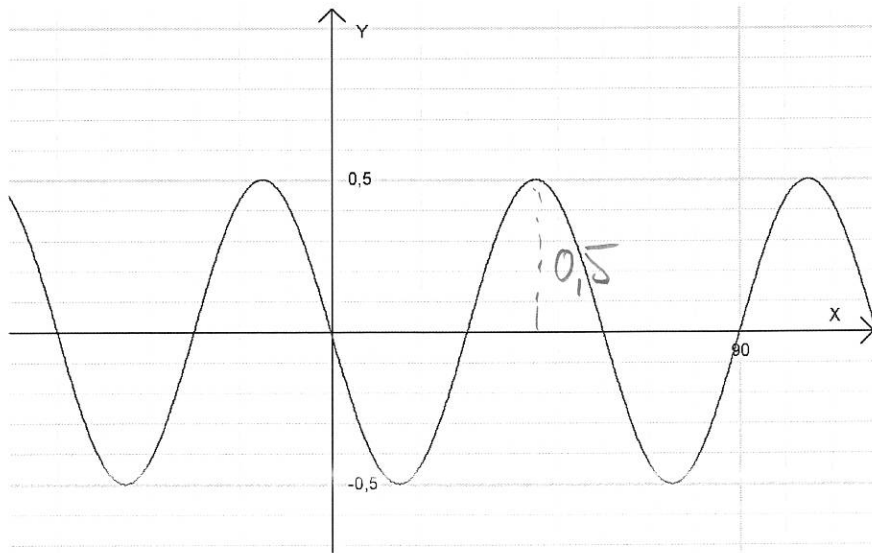
$$\uparrow \rightarrow \Rightarrow \cos(\)$$

$$\frac{1}{4} P = 150^\circ$$

$$P = 600^\circ$$

$$\Rightarrow k = \frac{360}{600} = 0,6$$

$$\boxed{2 \cos(0,6x)}$$



f)

$$\uparrow \rightarrow \Rightarrow -\sin(\)$$

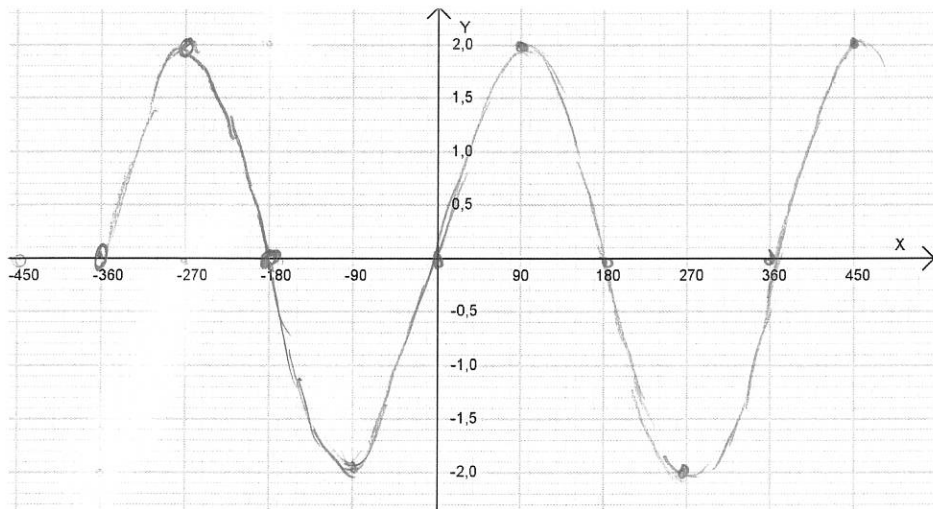
$$A = 0,5$$

$$P = 60^\circ \Rightarrow$$

$$k = \frac{360}{60} = 6$$

$$\boxed{-0,5 \sin(6x)}$$

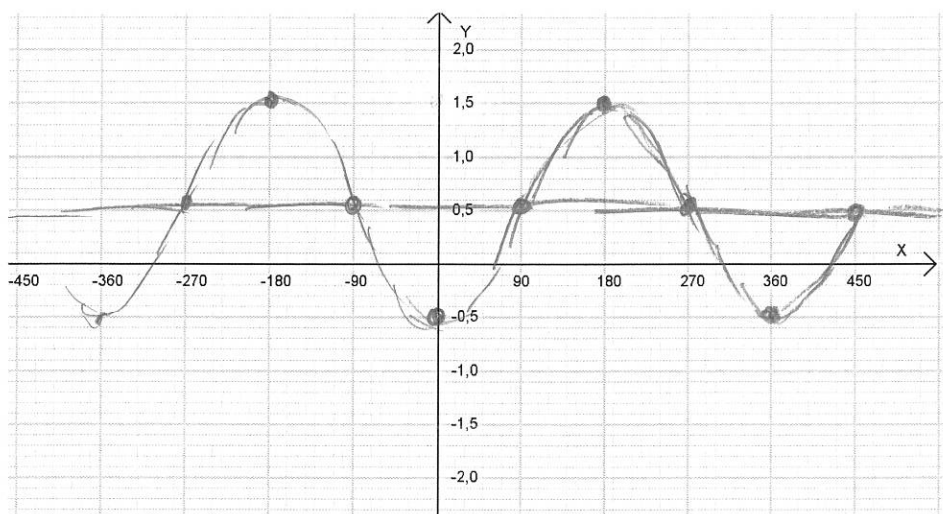
2. Rita graferna till funktionerna i koordinatsystemen nedan.



$$f(x) = 2\sin(x)$$

a)

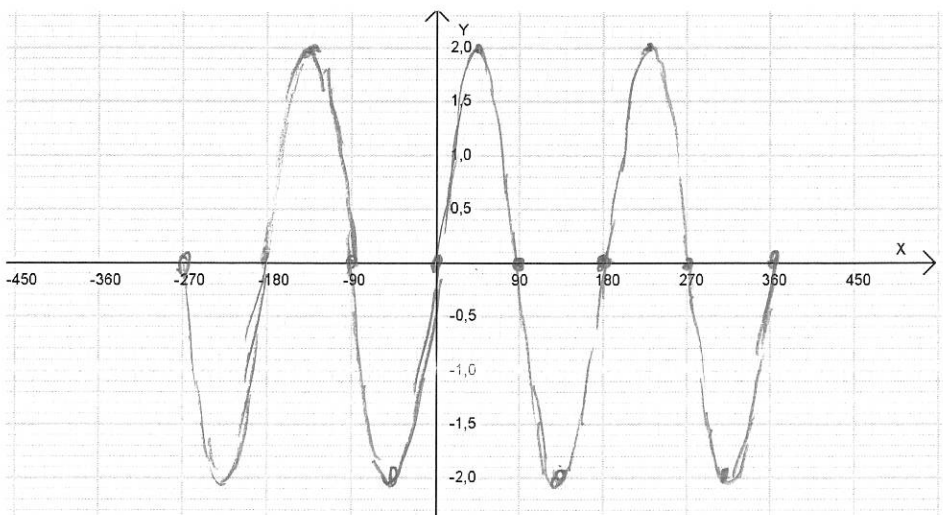
↑
↔ "sin"
A=2



$$f(x) = -\cos(x) + 0.5$$

b)

↑
↔ "-cos"
⇐ mittlinje
A=1



$$f(x) = 2\sin(2x)$$

c)

↑
↔ "sin"
 $P = \frac{360^\circ}{2} = 180^\circ$
A=2