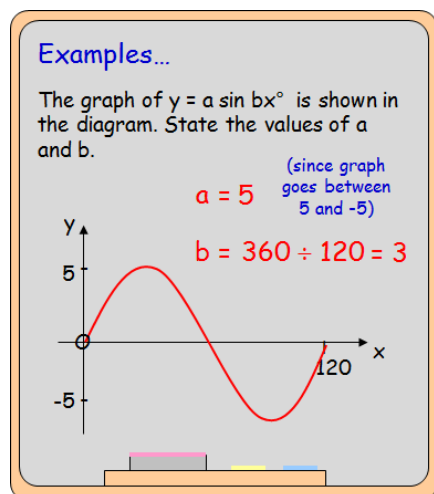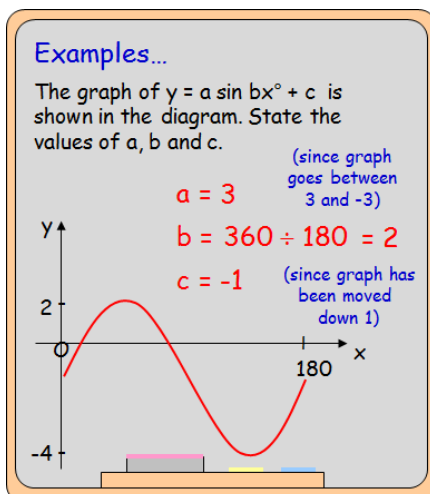# Outcome 1 – Identifying features on trig graphs
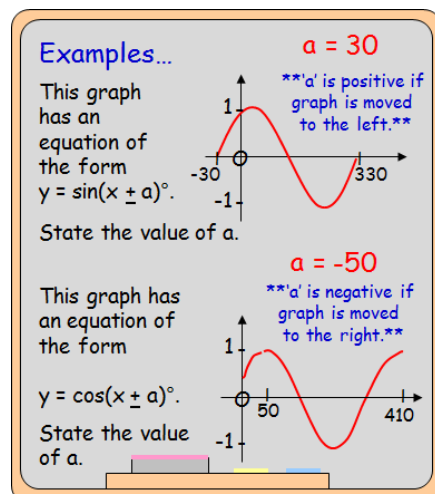
Bronze example

**Silver example**

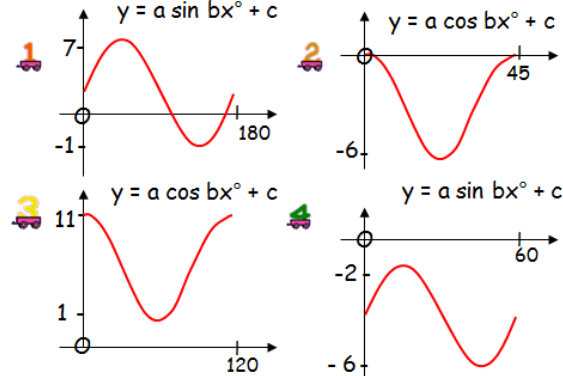**Gold examples**

Examples…

The graph of $y = a \sin bx°$ is shown in the diagram. State the values of a and b.

$a = 5$ (since graph goes between 5 and -5)

$b = 360 ÷ 120 = 3$

Examples…

The graph of $y = a \sin bx° + c$ is shown in the diagram. State the values of a, b and c.

$a = 3$ (since graph goes between 3 and -3)

$b = 360 ÷ 180 = 2$

$c = -1$ (since graph has been moved down 1)

Examples…

This graph has an equation of the form $y = \sin(x ± a)°$.

State the value of a.

$a = 30$ **'a' is positive if graph is moved to the left.**

This graph has an equation of the form $y = \cos(x ± a)°$.

State the value of a.

$a = -50$ **'a' is negative if graph is moved to the right.**

Bronze Questions

For the following trigonometric graphs, write down the values of a and b…

1 $y = a \sin bx°$ 4, 180, -4

2 $y = a \cos bx°$ 6, 90, -6

3 $y = a \cos bx°$ 9, 45, -9

4 $y = a \sin bx°$ 0·3, 72, -0·3
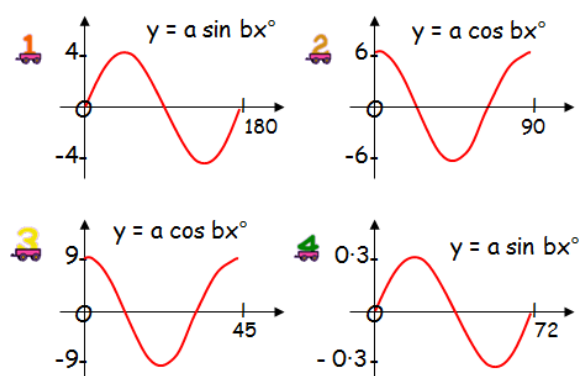
Silver Questions

For the following trigonometric graphs, write down the values of a, b and c…

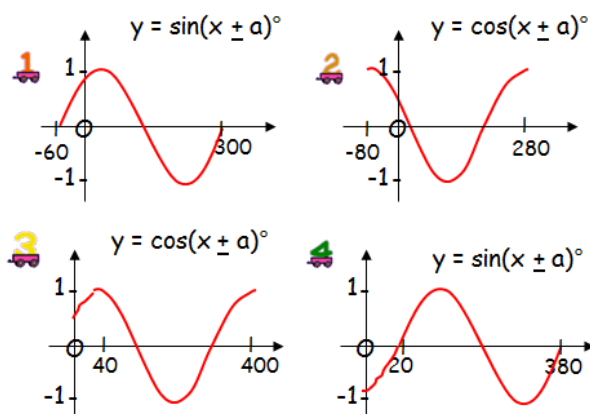**1** $y = a \sin bx° + c$ 7, 180, -1

2 $y = a \cos bx° + c$ 45, -6

3 $y = a \cos bx° + c$ 11, 120, 1

4 $y = a \sin bx° + c$ 60, -2, -6

Gold Questions

For the following trigonometric graphs, write down the value of a…

1 $y = \sin(x ± a)°$ -60, 1, 300, -1

2 $y = \cos(x ± a)°$ -80, 1, 280, -1

3 $y = \cos(x ± a)°$ 1, 40, 400, -1

4 $y = \sin(x ± a)°$ 1, 20, 380, -1
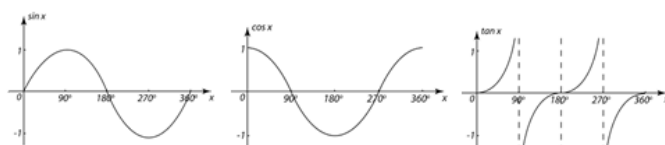
Bronze Answers

1.   a = 4, b = 2
2.   a = 6, b = 4
3.   a = 9, b = 8
4.   a = 0·3, b = 5

Silver Answers

1.   a = 4, b = 2, c = 3
2.   a = 3, b = 8, c = -3
3.   a = 5, b = 3, c = 6
4.   a = 2, b = 6, c = -4

Gold Answers

1.   a = 60
2.   a = 80
3.   a = -40
4.   a = -20