Section 4.5 Writing Equations Practice – a and d values

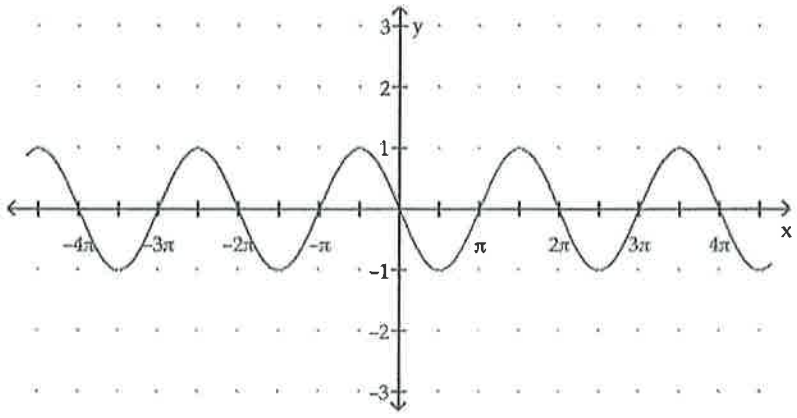
Name key

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

For each graph, identify the maximum value, the minimum value. Determine the amplitude and the equation of the axis of wave. Decide if the curve is sine or cosine. Is there a reflection? If yes, your a–value should be negative, if no, your a value is positive. What is the d value? Use these value to create an equation of the curve in the form $y = d+cos(x)$ or $y=d+sin(x)$.

1) 1)

A)



① sine

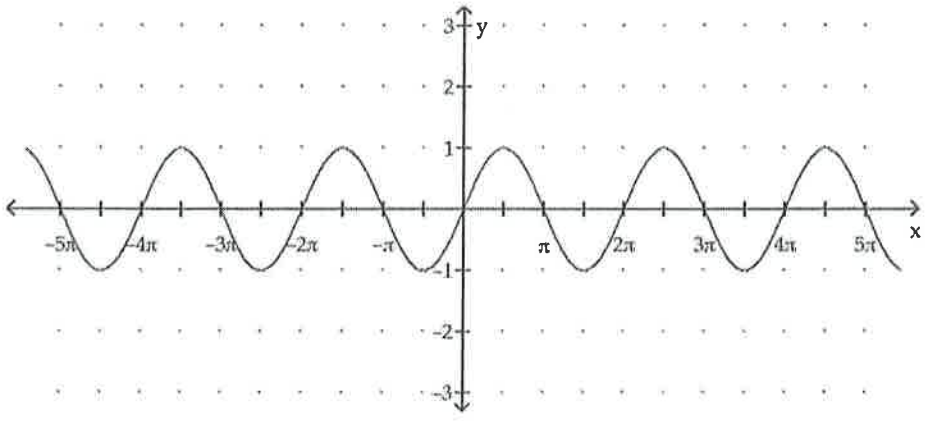
② $a = \frac{1}{2}(1+1) = \frac{1}{2}(2) = 1$

③ max-amp: $1-1=0$

④ Reflection

$y = -\sin x$

B)



① sine

② $a = \frac{1}{2}(1+1) = \frac{1}{2}(2) = 1$

③ max-amp $= 1-1=0$

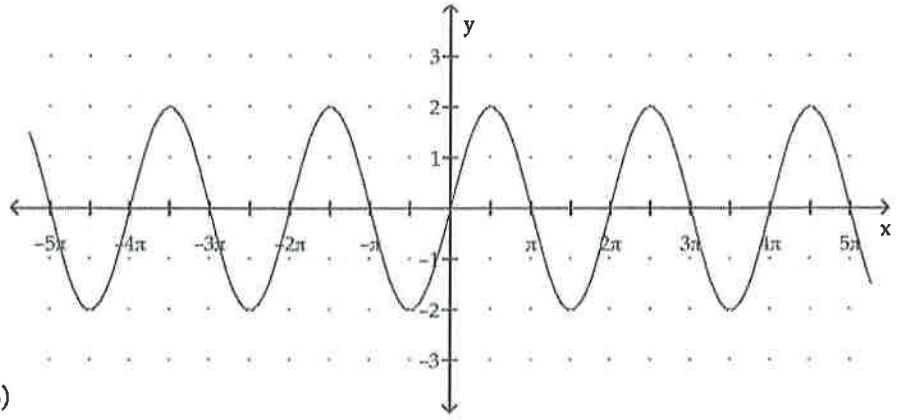
④ no reflection

$y = \sin x$

2)

2)

A)



① sine

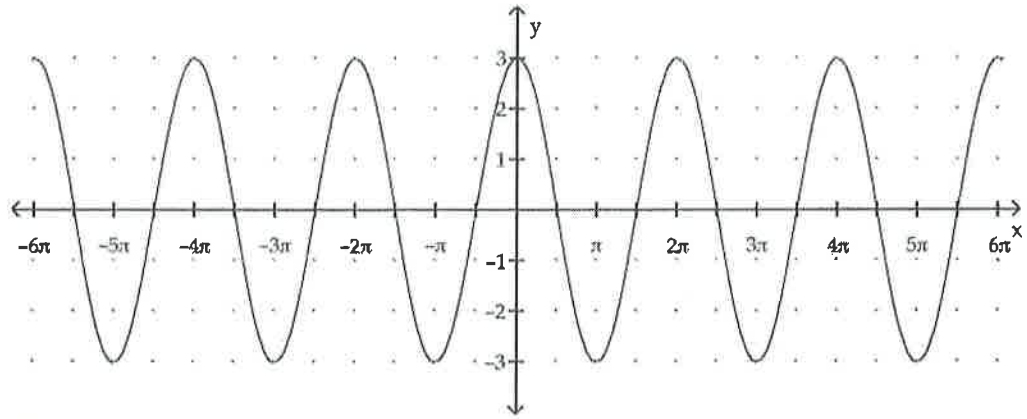
② $a = \frac{1}{2}(2+2) = \frac{1}{2}(4) = 2$

③ max-amp = 2-2 = 0

④ no reflection

$y = 2\sin x$

B)



① cosine

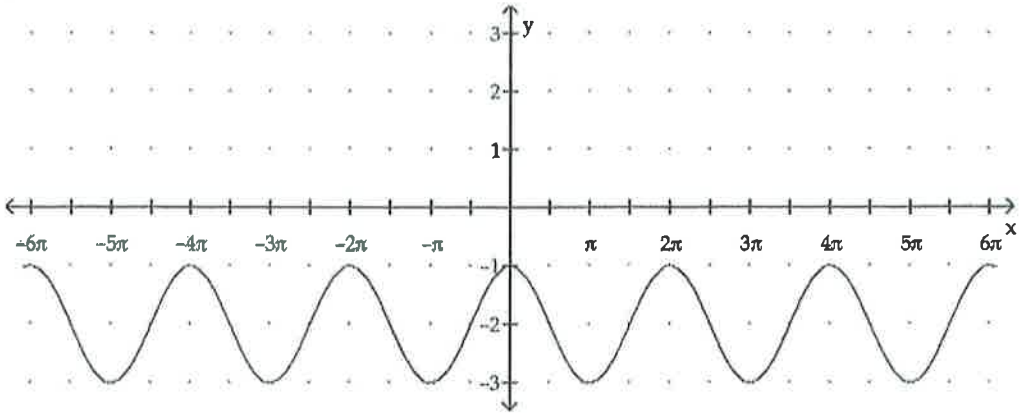
② $a = \frac{1}{2}(3+3) = \frac{1}{2}(6) = 3$

③ max-amp = 3-3 = 0

④ no reflection

$y = 3\cos x$

3) A)



① cosine

② $a = \frac{1}{2}(-1+3) = \frac{1}{2}(2) = 1$

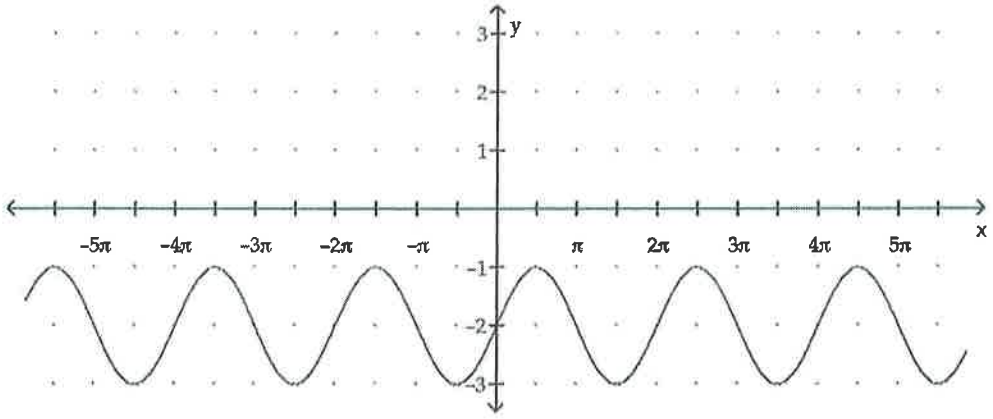
③ max-amp: $-1-1 = -a$

④ no reflection

$y = \cos x - a$

3)

B)



① sine

② $a = \frac{1}{2}(-1+3) = \frac{1}{2}(2) = 1$

③ max-amp: $-1-1 = -a$

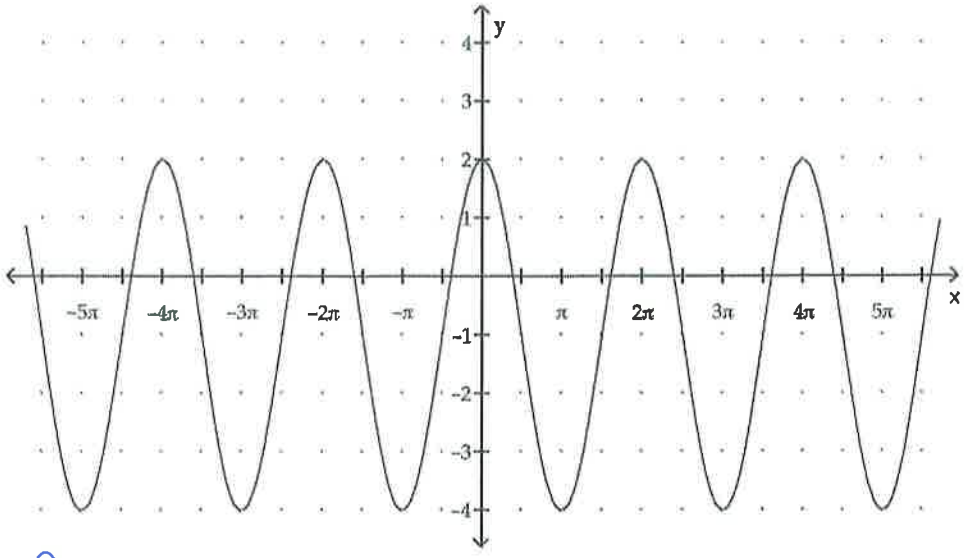
④ no reflection

$y = \sin x - 2$

4)

4)

A)



① cosine

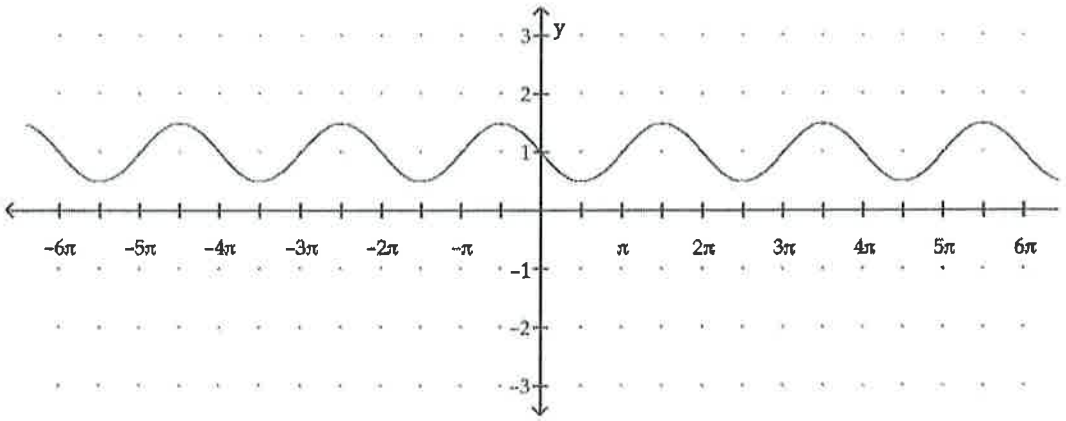
② $a = \frac{1}{2}(2+4) = \frac{1}{2}(6) = 3$

③ max-amp: $2-3 = -1$

④ no reflection

$y = 3\cos x - 1$

B)



① sine

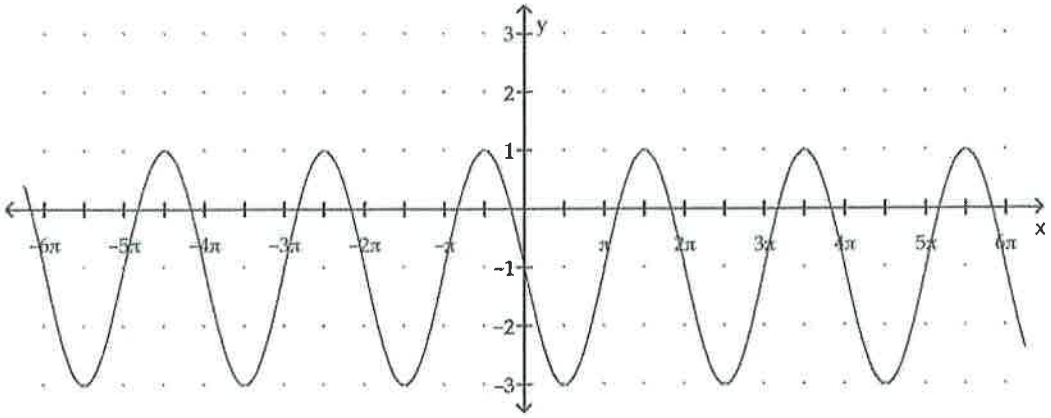
② $a = \frac{1}{2}(1.5-0.5) = \frac{1}{2}(1) = \frac{1}{2}$

③ max-amp: $1.5-0.5 = 1$

④ reflection

$y = -\frac{1}{2}\sin x + 1$

C)



① sine

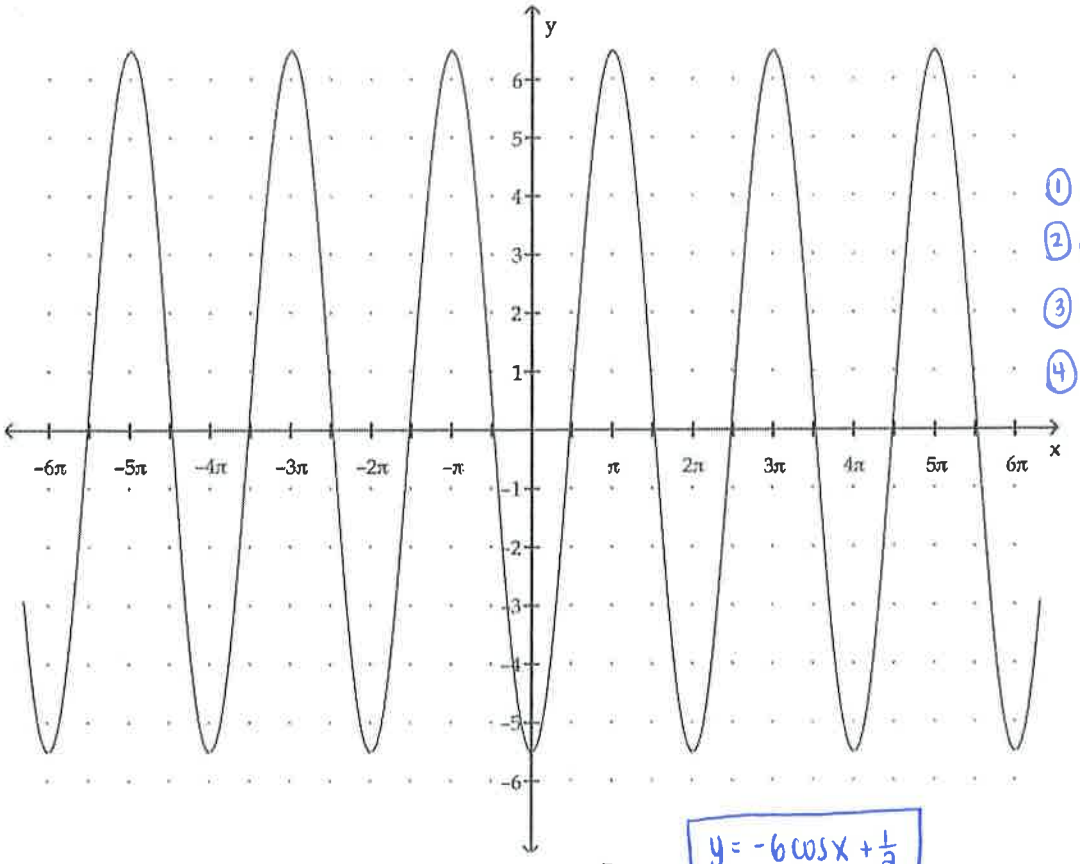
② $a = \frac{1}{2}(1+3) = \frac{1}{2}(4) = 2$

③ max-amp = 1-2 = -1

④ reflection

$y = -2\sin x - 1$

D)



① cosine

② $a = \frac{1}{2}(6.5 - 5.5) = \frac{1}{2}(12) = 6$

③ max-amp = 6.5 - 6 = 0.5

④ reflection

$y = -6\cos x + \frac{1}{2}$