

2:



1. The waveform shown in the figure is:

A. A periodic waveform with a period of 100 ns and a duty cycle of 50%.

B. A periodic waveform with a period of 100 ns and a duty cycle of 25%.

C. A periodic waveform with a period of 100 ns and a duty cycle of 75%.

2. The waveform shown in the figure is:

D. A periodic waveform with a period of 100 ns and a duty cycle of 50%.

E. A periodic waveform with a period of 100 ns and a duty cycle of 25%.

F. A periodic waveform with a period of 100 ns and a duty cycle of 75%.

3. The waveform shown in the figure is:

G. A periodic waveform with a period of 100 ns and a duty cycle of 50%.

H. A periodic waveform with a period of 100 ns and a duty cycle of 25%.

I. A periodic waveform with a period of 100 ns and a duty cycle of 75%.

J. A periodic waveform with a period of 100 ns and a duty cycle of 50%.

3:



Which of the following is true?

- A.  $f(x)$  is a linear function.
- B.  $f(x)$  is a piecewise linear function.
- C.  $f(x)$  is a piecewise linear function, but it is not a linear function.
- D.  $f(x)$  is a piecewise linear function, but it is not a piecewise linear function.
- E.  $f(x)$  is a piecewise linear function, but it is not a piecewise linear function.

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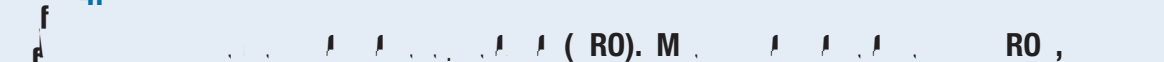
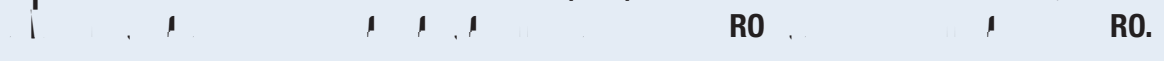
F.  ( )

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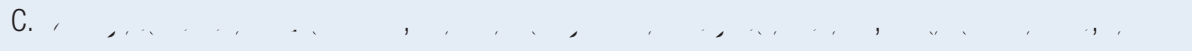
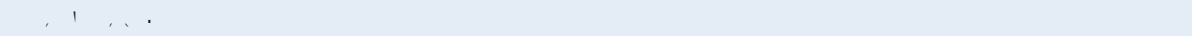
Which of the following is true?

4:


 ( RO). M . RO , RO.  

 RO . RO .

A.  ( ).  
*(Always keep it on or near your person. If you change bags, that's the first thing that should go in.)*

B.   


C.   


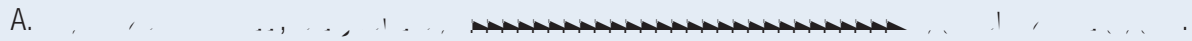
5:

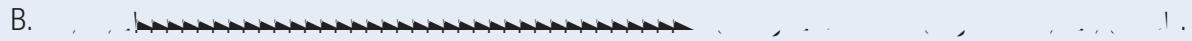

 . E  

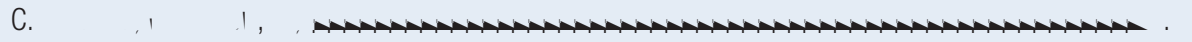
 . F  

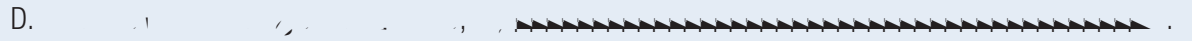
 . E  

 .

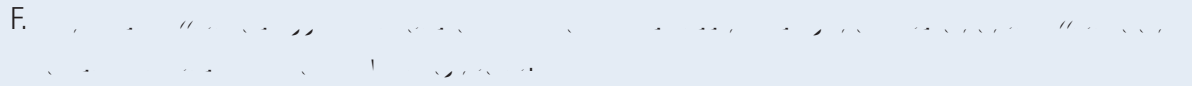
A. 

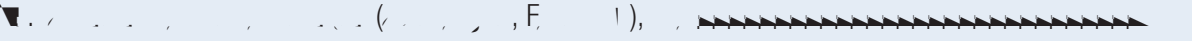
B. 

C. 

D. 

E. 

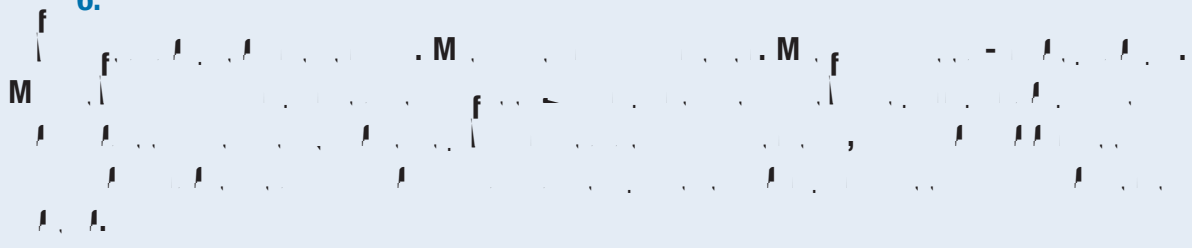
F. 

G. 





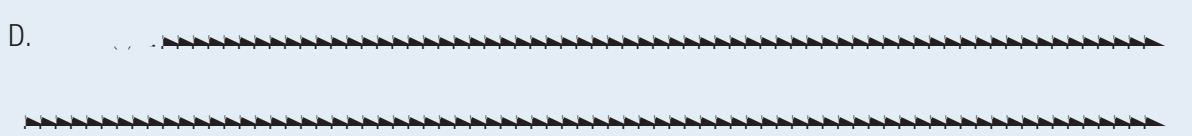
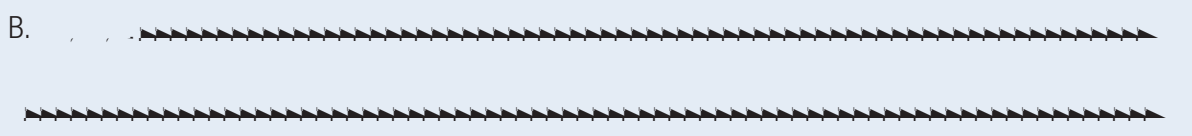
6:



Consider the signal  $x(t) = \cos(2\pi f_c t) \cos(2\pi f_m t)$ . B. The signal is a high-frequency carrier wave with a period of 2 units and amplitude of 1. The envelope is a square wave with a period of 20 units and amplitude of 1. The signal is labeled with 'M' at the start and end of the envelope, and 'f' at the peaks of the carrier wave.

C. The signal is a high-frequency carrier wave with a period of 2 units and amplitude of 1. The envelope is a square wave with a period of 20 units and amplitude of 1. The signal is labeled with 'M' at the start and end of the envelope, and 'f' at the peaks of the carrier wave.

A. The signal is a high-frequency carrier wave with a period of 2 units and amplitude of 1. The envelope is a square wave with a period of 20 units and amplitude of 1. The signal is labeled with 'M' at the start and end of the envelope, and 'f' at the peaks of the carrier wave.



7:

8:

B  $f(x) = \frac{1}{x^2} = x^{-2}$   
 $f'(x) = -2x^{-3} = -\frac{2}{x^3}$   
 $f''(x) = \frac{6}{x^4}$

Die zweite Ableitung ist  $f''(x) = \frac{6}{x^4}$ .  
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\* A  $(\frac{6}{x^4})$

\* C  $\frac{6}{x^4}$

\*  $\frac{6}{x^4}$

\*  $\frac{6}{x^4}$

\*  $\frac{6}{x^4}$

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