Functions & Graphs Test 2A

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Name: Answers

7 8 9 10 11 **12**

Navigator | Assessment | Student | 25 min

Question: 1

A possible equation for the graph of the curve shown is:

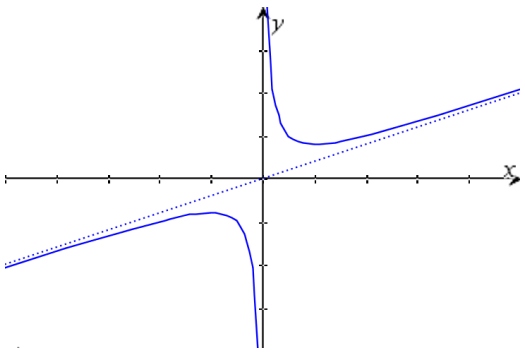
a) $y=\frac{ax^2+b}{x}$, $a>0$ and $b>0$

b) $y=\frac{ax^2+b}{x}$, $a<0$ and $b<0$

c) $y=\frac{ax^2+b}{x}$, $a<0$ and $b>0$

d) $y=\frac{ax^3+b}{x^2}$, $a>0$ and $b>0$

e) $y=\frac{ax^3+b}{x^2}$, $a<0$ and $b<0$



Question: 2

Which one of the following functions does **not** have range: $[-\pi,\pi]$

a) $y=\left|x-\frac{\pi}{2}\right|-\left|x+\frac{\pi}{2}\right|$

b) $y=2\sin^{-1}(x)$

c) $y=2\sin^{-1}(x-2)$

d) $y=\tan^{-1}(x)$

e) $y=2\cos^{-1}(x)-\pi$

Question: 3

$y=f(x)$ has a local maximum at $(2,-4)$, the function $y=\frac{1}{f(x)}$ will have:

a) a local maximum at $(2,4)$

b) a local maximum at $\left(2,-\frac{1}{4}\right)$

c) a local minimum at $(2,4)$

d) a local minimum at $\left(2,-\frac{1}{4}\right)$

e) a local minimum $\left(\frac{1}{2},-\frac{1}{4}\right)$

Question: 4

The graph $y=cosec(2x)$ has asymptotes:

a) $x=n\pi$ b) $x=2n\pi$ c) $x=\frac{2(n-1)\pi}{4}$ d) $x=\frac{n\pi}{4}$ e) $x=\frac{n\pi}{2}$

Question: 5

The graph of $y=\dfrac{1}{2a^2+ax-x^2}$ where a is a non-zero real constant, has asymptotes at:

a) $x=2a$ only

b) $x=-a$ only

c) $x=a$ and $x=-2a$ only

d) $x=-a$ and $x=2a$ only

e) $x=-a$, $x=2a$ and $y=0$.

Question: 6

The graph of $y=2\tan^{-1}\left(\dfrac{x}{2}\right)$ has asymptotes at

a) $x=\pm 2$ b) $y=\pm 2$ c) $x=\pm\dfrac{\pi}{2}$ d) $y=\pm\dfrac{\pi}{2}$ e) $y=\pm\pi$

Question: 7

Given $f(x)=(x-a)^2(x+a)^2$, $g(x)=\dfrac{1}{f(x)}$ and $a>1$ which statement is **not** true:

a) $f'(0)=0$ b) $f'(a)=0$ c) $g'(0)=0$ d) $g'(a)=0$ e) $0<g(0)<1$

Question: 8

If $f(x)=\dfrac{ax^2+bx+c}{x+5}$ has an asymptote $y=2x-4$ then

a) $a=2$, $b=5$ b) $a=2$, $b=-5$ c) $a=2$, $b=6$ d) $a=-2$, $b=4$ e) $a=2$, $b=-4$

Question: 9

If $f(x)=\dfrac{1}{x^2+bx+c}$ has two asymptotes of the form $x=m$ and $x=n$ then it follows:

a) $b>2\sqrt{c}$ or $b<-2\sqrt{c}$ b) $b>c$ c) $b<c$ d) $b<-2c$ e) $b>2c$

Question: 10

Given $a\neq b\neq c\neq d\neq 0$, a possible equation for the graph shown is:

a) $y=\dfrac{(x+a)(x-b)}{(x+c)(x-d)}$

b) $y=\dfrac{(x-a)(x-b)}{(x-c)(x-d)}$

c) $y=\dfrac{(x+a)^2(x+b)}{(x-c)(x-d)}$

d) $y=-x^3+\dfrac{1}{(x-c)(x-d)}+1$

e) $y=\dfrac{a(x+b)}{(x+c)(x-d)}$