ARE YOU READY 4 CALCULUS

TEACHER NAME: _____
STUDENT NAME: _____
PERIOD: _____

34 Problems | 55 Minutes | No Calculator

SCORE SHEET

STUDENT NAME: _____

Problem	Answer	Problem	Answer
1		21	
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Problem: 1

$\frac{5}{4} - \frac{3}{2} + \frac{1}{3}$

(a) $\frac{3}{5}$ (b) $\frac{1}{12}$ (c) $\frac{37}{12}$ (d) $-\frac{15}{24}$ (e) NA

Problem: 2

$(-2)^3$ is equal to

(a) -8 (b) 8 (c) $\frac{1}{8}$ (d) $-\frac{1}{8}$ (e) NA

Problem: 3

Simplify $5x + 3(x - y) + y$.

(a) $4(2x - y)$ (b) $2(4x - 3y)$ (c) $2(4x - y)$ (d) $8x - y$ (e) NA

Problem: 4

Let L be a constant. The solution x of the equation $2x + 7 = Lx - 4$.

(a) $\frac{4}{L-2}$ (b) $\frac{2x-11}{L}$ (c) $\frac{Lx-11}{2}$ (d) $\frac{11}{L-2}$ (e) NA

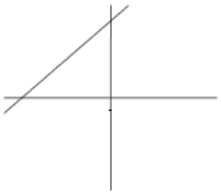
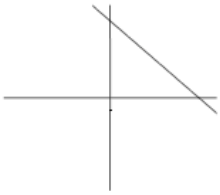
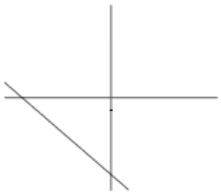
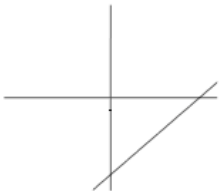
Problem: 5

If the enrollment of a college triples every 10 years, then by what factor does it increase over a 30 year period?

(a) 3 (b) 6 (c) 9 (d) 27 (e) 30

Problem: 6

Which of the following graphs is the graph of $x + y = 1$? The horizontal axis is the x –axis and the vertical axis is the y –axis.

(a)  (b)  (c)  (d) 

Problem: 7

The equation of the line with slope –3 and y-intercept $(0,2)$ is

$(a)\ y = 3x + 2$ $(b)\ y = -3x - 2$ $(c)\ y = 3x - 2$ $(d)\ y = -3x + 2$ $(e)\ y = 2x - 3$

Problem: 8

One of the solutions of the equation: $2x^2 + 3x - 2 = 0$ is

$(a)\ -1$ $(b)\ 2$ $(c)\ 1$ $(d)\ -\frac{1}{2}$ $(e)\ \frac{1}{2}$

Problem: 9

The function $f(x) = \dfrac{x+2}{(2x+1)(x-3)}$ is defined at all real numbers except

$(a)\ -2 \qquad (b)\ -\frac{1}{2} \qquad (c)\ 3 \qquad (d)\ -\frac{1}{2},\ 3 \qquad (e)\ -2,\ -\frac{1}{2},\ 3$

Problem: 10

The graph of $y = \dfrac{3x+2}{x^2-1}$ crosses the x-axis at $x =$

$(a)\ -\frac{2}{3} \qquad (b)\ \frac{3}{2} \qquad (c)\ 1 \qquad (d)\ -1 \qquad (e)\ \frac{2}{3}$

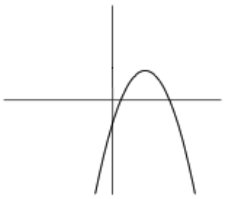
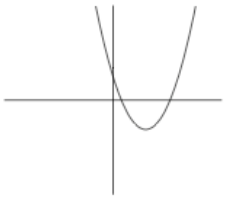
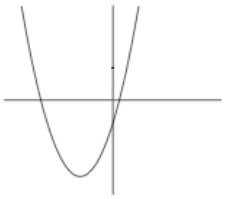
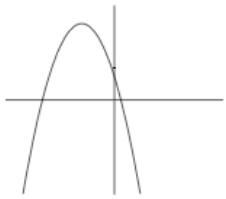
Problem: 11

If $f(x) = x^2$ and $g(x) = \sqrt{2+x}$, then $f(-2) + g(2) =$

$(a)\ -4 \qquad (b)\ 2 \qquad (c)\ -2 \qquad (d)\ -6 \qquad (e)\ 4 \qquad (f)\ 6$

Problem: 12

Which of the following graphs best resembles the graph of $y = -(x+2)^2 + 3$?

(a)  (b)  (c)  (d) 

Problem: 13

The width of a rectangular garden is one third of its length. If the total perimeter of the garden is 48 feet, then the **width** of the garden is:

(a) 18 feet (b) 6 feet (c) 12 feet (d) 10.5 feet (e) NA

Problem: 14

If the total perimeter of a circle is 6π, then the area of the circle is:

(a) 9 (b) 36 (c) 9π (d) 36π (e) NA

Problem: 15

Which of the following: (i) $x-2$, (ii) $x+2$, (iii) x^2+4, are factors of x^4-16?

(a) (i) only (b) (ii) only (c) (iii) only (d) (i) and (ii) only (e) (i), (ii) and (iii)

Problem: 16

If $\frac{2}{x-1} = 5$, then x is equal to

$(a)\ -\frac{3}{5}$ $(b)\ \frac{3}{5}$ $(c)\ \frac{7}{5}$ $(d)\ -\frac{7}{5}$ (e) NA

Problem: 17

Let a and b be nonzero real numbers. Then $\sqrt{a^2 - b^2} =$

$(a)\ a - b$ $(b)\ \pm(a - b)$ $(c)\ a \pm b$ $(d)\ \pm(a \pm b)$ (e) NA

Problem: 18

The least common denominator of $\frac{3}{x^2 + 2x} + \frac{1}{x^2 - 4}$ is

$(a)\ x^2 - 4$ $(b)\ x^2 + 2x$ $(c)\ (x^2 + 2x)(x^2 - 4)$ $(d)\ x(x^2 - 4)$ (e) NA

Problem: 19

$\left(\frac{2}{5}\right)^{-2}$ is equal to

$(a)\ -\frac{4}{25}$ $(b)\ -\frac{4}{5}$ $(c)\ \frac{4}{25}$ $(d)\ \frac{4}{5}$ $(e)\ \frac{25}{4}$

Problem: 20

$(9)^{1/2}(16)^{1/4}$

(a) 6 (b) 12 (c) 18 (d) $\frac{3}{2}$ (e) $\frac{2}{3}$

Problem: 21

$\sqrt{50x^8y^{12}} =$

(a) $25x^4y^6$ (b) $25x^8y^{12}$ (c) $5x^4y^6\sqrt{2}$ (d) $5x^6y^{10}\sqrt{2}$ (e) $5x^4y^6$

Problem: 22

Simplify $\left(\frac{x^2-9}{3x}\right)\left(\frac{12}{2x+6}\right)$

(a) $\frac{2(x-3)}{x}$ (b) $\frac{2(x+3)}{x}$ (c) -3 (d) 6 (e) $2(x+3)$

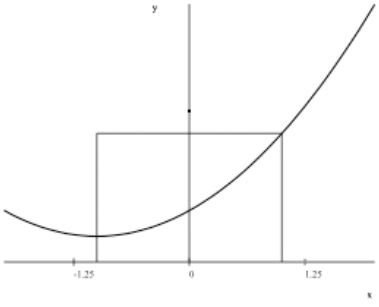
Problem: 23

If $f(x) = x^2 + 3$, then $f(x-h) =$

(a) $x^2 - h^2 + 3$ (b) $(x-h)^2 + 3$ (c) $(x-h+3)^2$ (d) $x^2 + 3 - h$ (e) $(x^2+3) - (h^2+3)$

Problem: 24

The graph of $f(x) = \frac{1}{2}x^2 + x + 1$ is given below. Find the area of the rectangle.

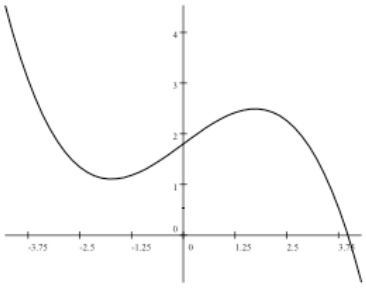


$y = f(x)$

(a) 2 (b) 2.5 (c) 3 (d) 4 (e) 5

Problem: 25

The graph of $f(x)$ is given below. Which one of the following values is closest to x if $f(x) = 4$?

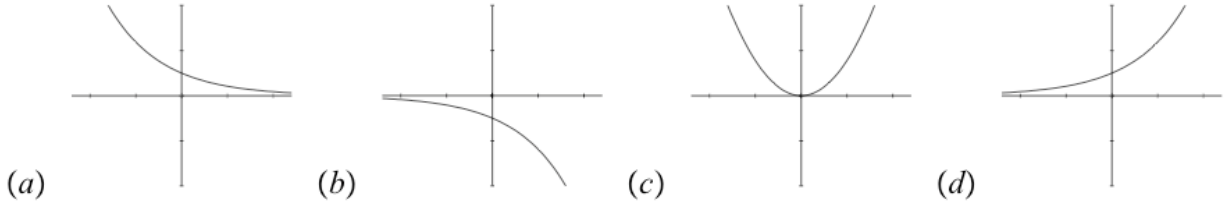


$y = f(x)$

(a) 0 (b) -1 (c) 2 (d) -2 (e) 4 (f) -4

Problem: 26

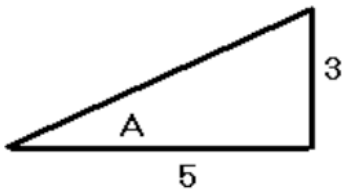
Which of the following curves best resembles the graph of $f(x) = e^x$?



(a) (b) (c) (d)

Problem: 27

The two legs of a right triangle given below have lengths 3 and 5, respectively. Let A be the smallest angle of this right triangle. Then $\sin(A)$ is



(a) $\frac{3}{5}$ (b) $\frac{4}{5}$ (c) $\frac{3}{\sqrt{34}}$ (d) $\frac{4}{\sqrt{34}}$ (e) $\frac{5}{\sqrt{34}}$

Problem: 28

$[\sin(30^\circ)]^2 =$

(a) $\frac{1}{4}$ (b) $\frac{3}{4}$ (c) 1 (d) $\frac{1}{2}$ (e) $\frac{\sqrt{3}}{2}$

Problem: 29

If $\sin(\theta) = a$ and $\cos(\theta) = b$, then $\tan(\theta)$ is equal to

(a) $\frac{b}{a}$ (b) $\frac{a}{b}$ (c) $\frac{a}{\sqrt{a^2+b^2}}$ (d) $\frac{b}{\sqrt{a^2+b^2}}$ (e) $\frac{a}{\sqrt{a^2-b^2}}$ (f) $\frac{b}{\sqrt{a^2-b^2}}$

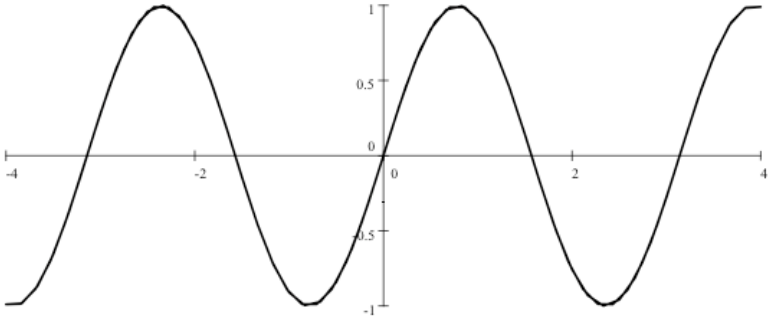
Problem: 30

$1 - \cos^2(\theta) =$

(a) $\sin(\theta)$ (b) $-\sin^2(\theta)$ (c) $\sin^2(\theta)$ (d) $\sec^2(\theta)$ (e) $-\cos(2\theta)$

Problem: 31

The graph below best represents which function?



(a) $\sin(2x)$ (b) $2\sin(2x)$ (c) $\cos(\frac{x}{2})$ (d) $\frac{1}{2}\cos(x)$ (e) $2\cos(\frac{x}{2})$

Problem: 32

If $f(x) = \sin(6x)$, then $f\left(\frac{\pi}{12}\right) =$

$(a)\ \frac{\sqrt{3}}{2}$ $(b)\ \frac{\sqrt{2}}{2}$ $(c)\ 1$ $(d)\ \frac{1}{2}$ $(e)\ 0$

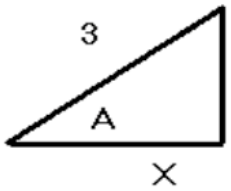
Problem: 33

The function $f(x) = \tan(x)$ is not defined at $x =$

$(a)\ \frac{\pi}{6}$ $(b)\ \frac{\pi}{3}$ $(c)\ \frac{\pi}{4}$ $(d)\ \frac{\pi}{2}$ $(e)\ \pi$

Problem: 34

A right triangle is given below where the angle $A = 45^\circ$. The value of x is:



$(a)\ \frac{3}{2}$ $(b)\ 3\sqrt{2}$ $(c)\ \frac{3\sqrt{2}}{2}$ $(d)\ \frac{3\sqrt{3}}{2}$ (e) NA

Problem	Answer	Problem	Answer
1	B	**21**	C
2	A	**22**	A
3	C	**23**	B
4	D	**24**	E
5	D	**25**	F
6	B	**26**	D
7	D	**27**	C
8	E	**28**	A
9	D	**29**	B
10	A	**30**	C
11	F	**31**	A
12	D	**32**	C
13	B	**33**	D
14	C	**34**	C
15	E		
16	C		
17	E		
18	D		
19	E		
20	A		