ARE YOU READY 4 CALCULUS

TEACHER NAME: _____
STUDENT NAME: _____
PERIOD: _____

25 Problems | 40 Minutes | No Calculator

SCORE SHEET

STUDENT NAME: _____

Problem	Answer	Problem	Answer
1		21	
2		22	
3		23	
4		24	
5		25	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Problem: 1

Money in a bank triples every 8 years. If \$100 is deposited today, what will its value be after 32 years?

☐ $\$8,500$ ☐ $\$8,100$ ☐ $\$1,600$ ☐ $\$400$

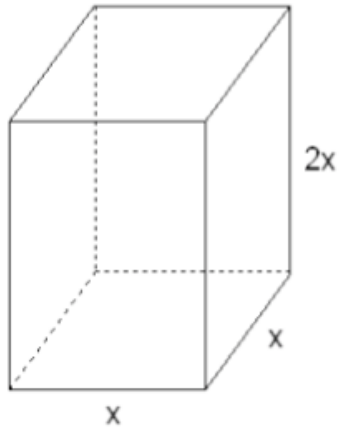
Problem: 2

The y-coordinate of the point of intersection of the graph of $-x + 4y = -50$ and $x + y = 20$ is

☐ 6 ☐ 0 ☐ -14 ☐ -6

Problem: 3

The rectangular box shown below has a square base and a closed top. The height is twice the length of one side of the base. Its surface area in terms of x is



☐ $20x$ ☐ $8x + 2x^2$ ☐ $10x^2$ ☐ $6x$

Problem: 4

If 2^{13} is approximately equal to 8000, then, of the following, which best approximates 2^{26}?

☐ $640,000$ ☐ $6,400,000$ ☐ $64,000,000$ ☐ 8000^{13}

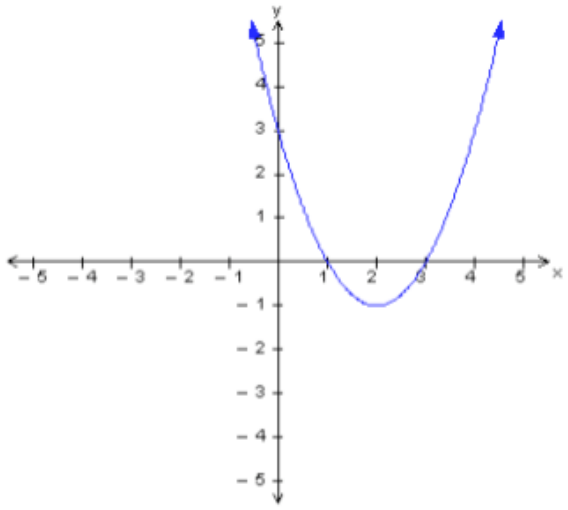
Problem: 5

$2^{-5} \cdot 64^{2/3} =$

☐ 512 ☐ $\frac{1}{512}$ ☐ 1 ☐ $\frac{1}{2}$

Problem: 6

If f is a function whose graph is the parabola sketched below then $f(x) < 0$ whenever



☐ $x < 1$ or $x > 3$ ☐ $x < 1$

☐ $x > 3$ ☐ $1 < x < 3$

Problem: 7

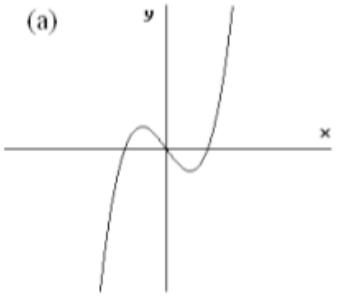
If $\log_2(x - 6) = 6$ then $x =$

☐ 70 ☐ 64 ☐ 58 ☐ $\frac{6}{\log_2 6} + 6$

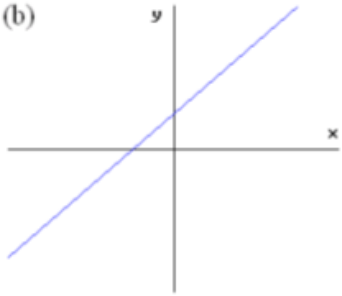
Problem: 8

A function f is even if $f(-x) = f(x)$ for each x in the domain of f. Of the following, which best represents the graph of an even function?

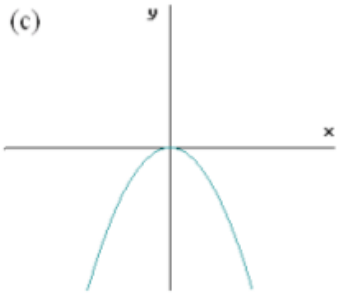
(a)



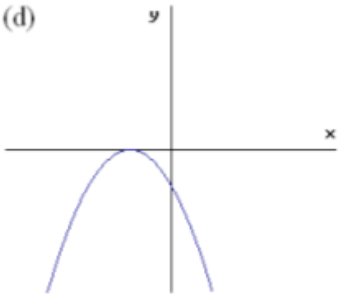
(b)



(c)



(d)



☐ (a) ☐ (b) ☐ (c) ☐ (d)

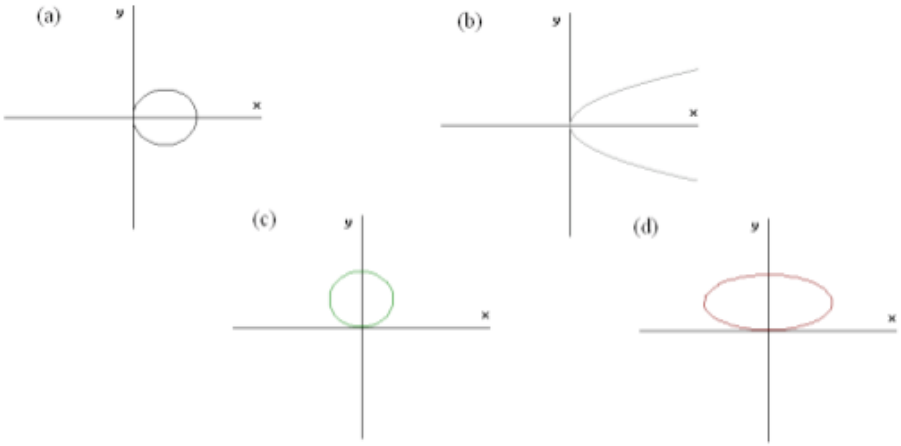
Problem: 9

If $\dfrac{(2x-3)(x+5)}{x-7} = 0$ then $x =$

☐ $5, 7, -\frac{3}{2}$ ☐ 5 or $\frac{3}{2}$ ☐ -5, 7, or $\frac{3}{2}$ ☐ -5 or $\frac{3}{2}$

Problem: 10

Of the following, which best represents the graph of $x^2 + y^2 - 2y = 0$?



☐ (a) ☐ (b) ☐ (c) ☐ (d)

Problem: 11

If $f(x) = \frac{5x+3}{2x+3}$ then $f(n+1) =$

☐ $\frac{8}{5}$ ☐ $\frac{5n+3}{2n+3} + 1$ ☐ $\frac{5n+8}{2n+5}$ ☐ $\frac{5n+4}{2n+4}$

Problem: 12

The slope of the line that goes through the points $(-5, 4)$ and $(3, -12)$ is

☐ $-\frac{1}{2}$ ☐ 8 ☐ -2 ☐ 4

Problem: 13

Find all solutions to the equation $3x^2 = 4x + 1$.

☐ $4/3,\ 1/3$ ☐ $\frac{2+\sqrt{7}}{3}, \frac{2-\sqrt{7}}{3}$

☐ $\frac{4+3\sqrt{2}}{6}, \frac{4-3\sqrt{2}}{6}$ ☐ $\frac{2+\sqrt{2}}{3}, \frac{2-\sqrt{2}}{3}$

Problem: 14

In a standard coordinate system, the graph of the equation $y = -3x+7$ is

☐ a line falling to the right ☐ a line rising to the right

☐ a horizontal line ☐ not a line

Problem: 15

The inequality $|x-4| \leq 8$ is equivalent to

- ☐ $-4 \leq x \leq 12$
- ☐ $-12 \leq x \leq 4$
- ☐ $-12 \leq x \leq 12$
- ☐ $x \leq 12$

Problem: 16

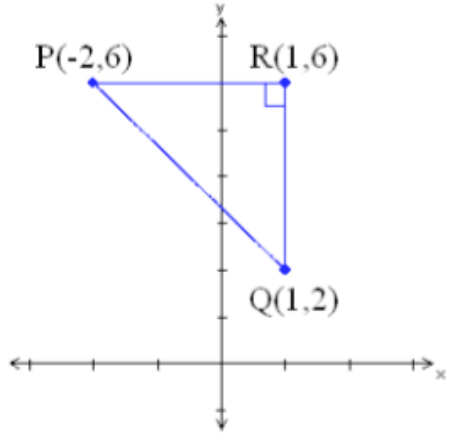
The quantity $a-b$ is a factor of how many of the following?

$$a^2-b^2 \qquad a^2+b^2 \qquad a^3-b^3 \qquad a^3+b^3$$

- ☐ one only
- ☐ two only
- ☐ three only
- ☐ four

Problem: 17

In the figure shown below, what is the distance between the points P and Q?



- ☐ 11
- ☐ 7
- ☐ 6
- ☐ 5

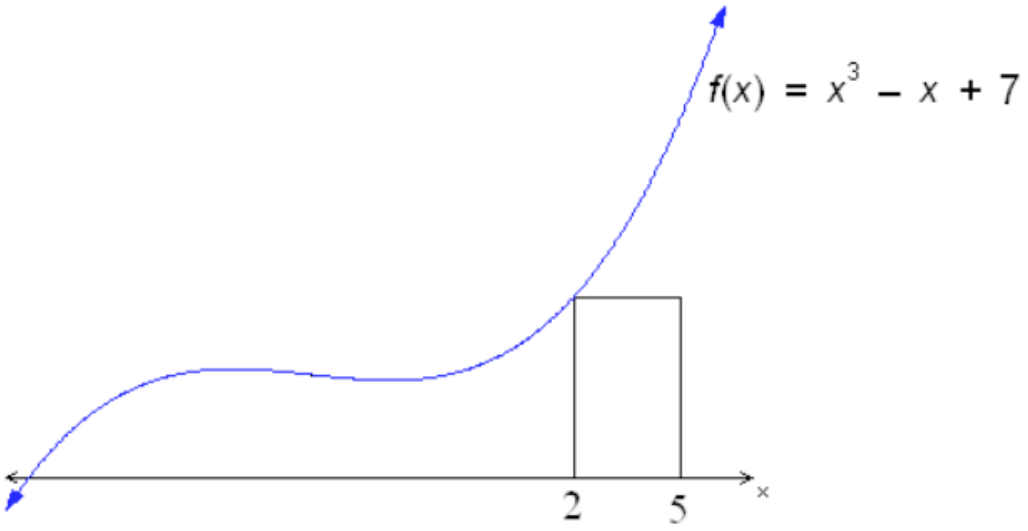
Problem: 18

The length of a certain rectangle is 6 meters more than twice its width. What is the perimeter of the rectangle if the area of the rectangle is 260 square meters?

☐ 54 meters ☐ 60 meters ☐ 66 meters ☐ 72 meters

Problem: 19

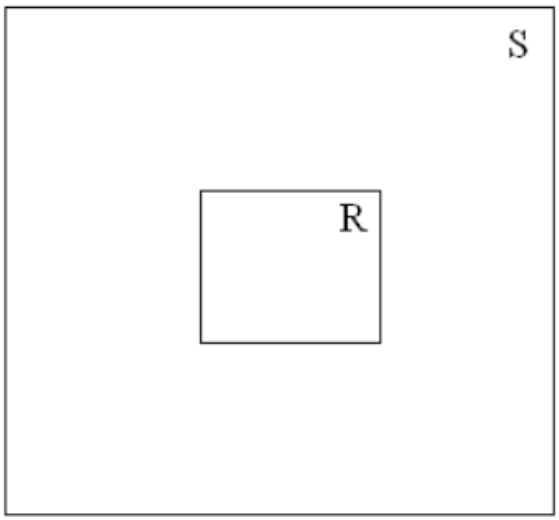
What is the area of the rectangle shown in the figure below? (Note: The figure is not drawn to scale.)



☐ 3 ☐ 27 ☐ 31 ☐ 39

Problem: 20

A rectangle R has width x and length y. A rectangle S is formed from R by multiplying each of the sides of the rectangle R by 4 as shown in the figure below. What is the area of the portion of S lying outside R? (Note: The figure is not drawn to scale.)



☐ $16xy$ ☐ $15xy$ ☐ $4xy$ ☐ x^4y^4

Problem: 21

What is the radian measure of an angle whose degree measure is $240°$?

☐ $\frac{\pi}{3}$ ☐ $\frac{2\pi}{3}$ ☐ $\frac{3\pi}{4}$ ☐ $\frac{4\pi}{3}$

Problem: 22

$\csc(30°) =$

☐ 2 ☐ $\frac{2}{\sqrt{3}}$ ☐ $\sqrt{2}$ ☐ $\sqrt{3}$

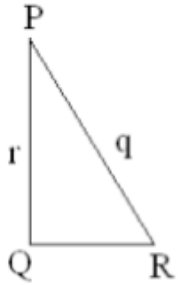
Problem: 23

For which values of x in the interval $0 \leq x \leq 2\pi$ does $(\sin x - 1)(\sin x - 5) = 0$?

☐ $\frac{\pi}{2}$ only ☐ 1 and 5 ☐ π ☐ 0 and 2π

Problem: 24

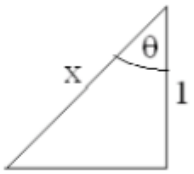
In the figure below, if $\sin R = \frac{5}{8}$ and $r = 2$, then what is q?



☐ $\frac{16}{5}$ ☐ $\frac{5}{4}$ ☐ 5 ☐ $\frac{5}{16}$

Problem: 25

In the right triangle shown in the figure below, $\tan\theta =$



☐ x ☐ $x\sqrt{x^2-1}$ ☐ x^2+1 ☐ $\sqrt{x^2-1}$

Problem	Answer	Problem	Answer
1	B	**21**	D
2	D	**22**	A
3	C	**23**	A
4	C	**24**	A
5	D	**25**	D
6	D		
7	A		
8	C		
9	D		
10	C		
11	C		
12	C		
13	B		
14	A		
15	A		
16	B		
17	D		
18	D		
19	D		
20	B		