

# Pre Calculus Honors Assignment

**By the end of day 3** students must complete the Calc AP Readiness Test. This packet is designed to give students extra practice on Pre Requisite Skills for Calculus. Students must submit their answers to the Calc AP College Readiness test to me by the end of Day 3. I will email directions on how to submit your answers.

All other Assignments will be assigned on Khan Academy. All Khan Academy assignments scheduled will have due dates assigned with them. Students will follow this schedule as Khan Academy will be monitored daily. All assignments will have resources available for any topic that students may need extra help in.

All students are expected to check their email daily for any communication from me.

Feel free to email me with any questions. [jsousa@rpsd.org](mailto:jsousa@rpsd.org)



# Practice Calculus Readiness Test

Instructions:

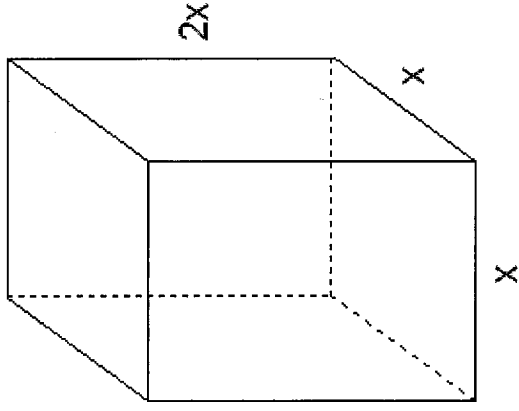
- Read each problem carefully. Then work the problem on a separate sheet of paper and click on the box next to the correct choice. If you change your mind, just click on a different choice.
- Use the navigational buttons at the bottom of each page to go to the next or previous page.
- A calculator is not required for any questions on this test.
- This practice test consists of 25 problems. Click on “Begin Quiz”, then begin.

**Begin Quiz**

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
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

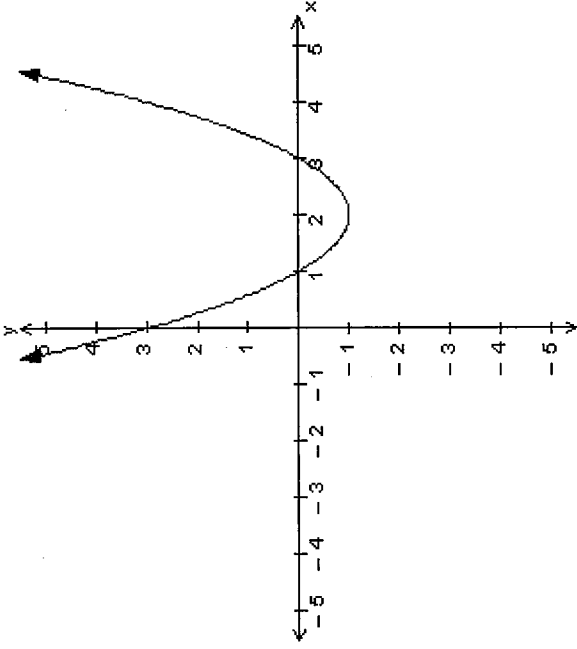


3. The rectangular box shown below has a square base and a closed top. The height is twice the length of one side of the base. Its surface area in terms of  $x$  is



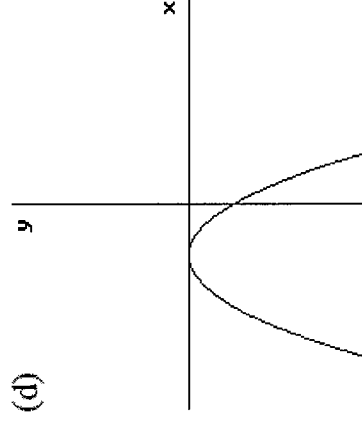
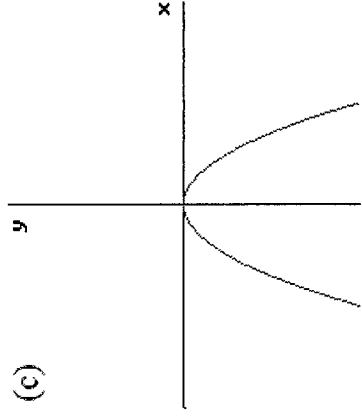
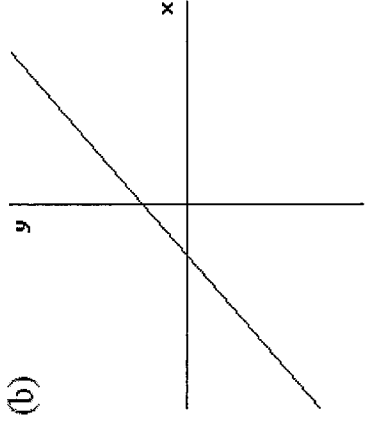
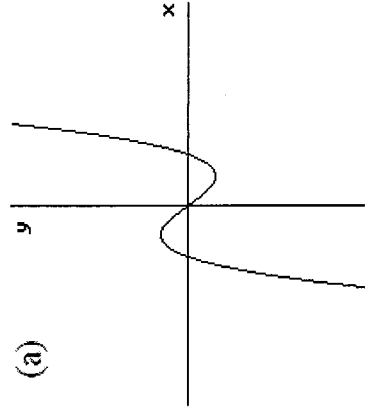
- $20x$     
   $8x + 2x^2$     
   $10x^2$     
   $6x$
4. If  $2^{13}$  is approximately equal to 8000, then, of the following, which best approximates  $2^{26}$ ?
- 640,000    
  6,400,000    
  64,000,000    
   $8000^{13}$
5.  $2^{-5} \cdot 64^{2/3} =$
- 512    
   $\frac{1}{512}$     
  1    
   $\frac{1}{2}$

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



- $x < 1$  or  $x > 3$         $x < 1$   
  $x > 3$         $1 < x < 3$
7. If  $\log_2(x - 6) = 6$  then  $x =$
- 70       64       58        $\frac{6}{\log_2 6} + 6$

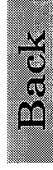
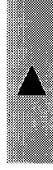
8. A function  $f$  is even if  $f(-x) = f(x)$  for each  $x$  in the domain of  $f$ . Of the following, which best represents the graph of an even function?



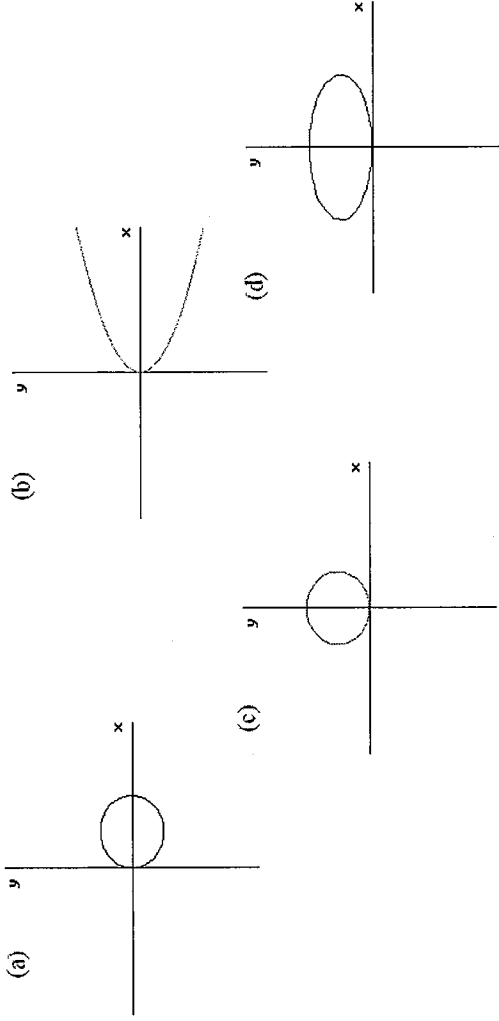
(a)       (b)       (c)       (d)

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

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



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



(a)       (b)       (c)       (d)

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

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

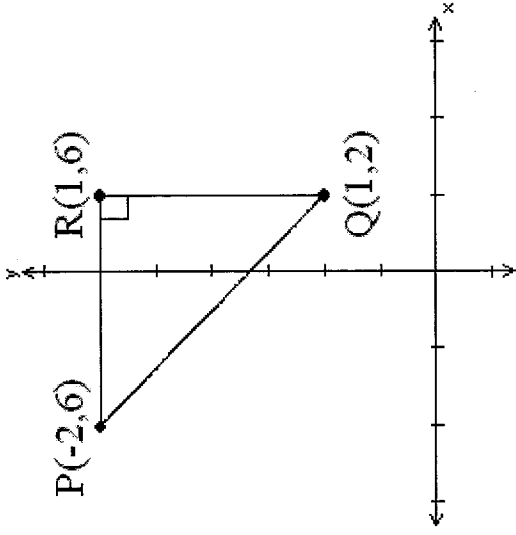
12. The slope of the line that goes through the points  $(-5, 4)$  and  $(3, -12)$  is

$-\frac{1}{2}$        8       -2       4

13. Find all solutions to the equation  $3x^2 = 4x + 1$ .
- $4/3, 1/3$         $\frac{2+\sqrt{7}}{3}, \frac{2-\sqrt{7}}{3}$
- $\frac{4+3\sqrt{2}}{6}, \frac{4-3\sqrt{2}}{6}$         $\frac{2+\sqrt{2}}{3}, \frac{2-\sqrt{2}}{3}$
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
15. The inequality  $|x - 4| \leq 8$  is equivalent to
- $-4 \leq x \leq 12$         $-12 \leq x \leq 4$
- $-12 \leq x \leq 12$         $x \leq 12$
16. The quantity  $a - b$  is a factor of how many of the following?
- one only       two only        $a^2 - b^2$         $a^2 + b^2$         $a^3 - b^3$         $a^3 + b^3$        three only       four



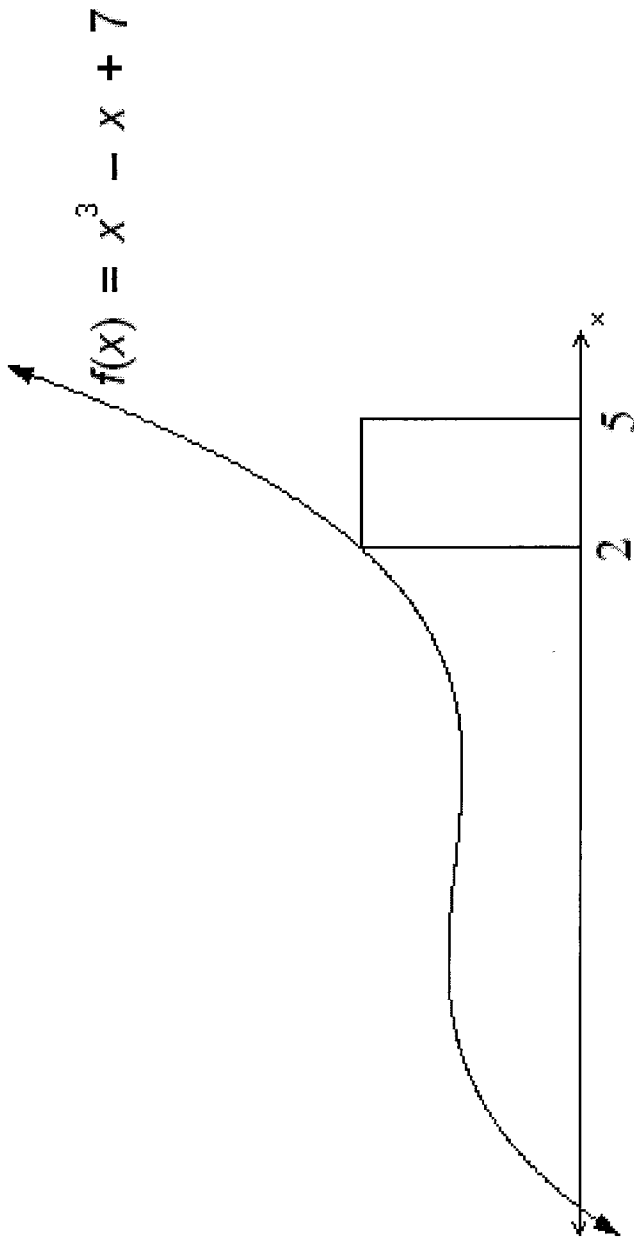
17. In the figure shown below, what is the distance between the points  $P$  and  $Q$ ?



- 11       7       6       5  
 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



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


 3

 27

 31

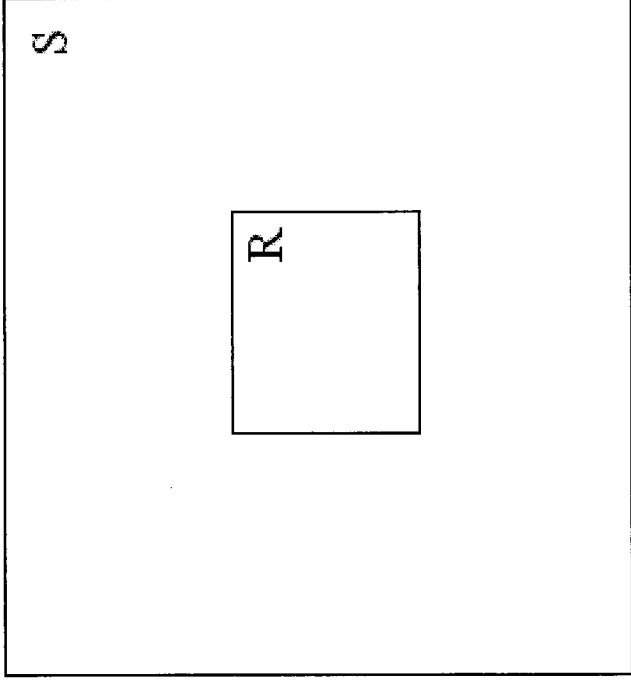
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20. A rectangle  $R$  has width  $x$  and length  $y$ . A rectangle  $S$  is formed from  $R$  by multiplying each of the sides of the rectangle  $R$  by 4 as shown in the figure below. What is the area of the portion of  $S$  lying outside  $R$ ?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



$16xy$

$15xy$

$4xy$

$x^4y^4$

21. What is the radian measure of an angle whose degree measure is  $240^\circ$ ?

$\frac{\pi}{3}$

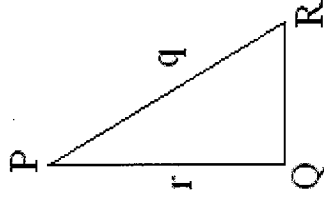
$\frac{2\pi}{3}$

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

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

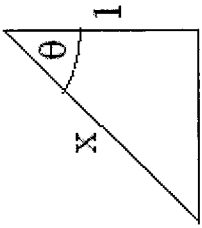
22.  $\csc(30^\circ) =$   2   $\frac{2}{\sqrt{3}}$    $\sqrt{2}$    $\sqrt{3}$
23. For which values of  $x$  in the interval  $0 \leq x \leq 2\pi$  does  $(\sin x - 1)(\sin x - 5) = 0$ ?  
  $\frac{\pi}{2}$  only  1 and 5   $\pi$   0 and  $2\pi$

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   $\frac{5}{16}$

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



$x$

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

$x^2 + 1$

$\sqrt{x^2 - 1}$

End Quiz

- Click on “End Quiz” to have the computer grade your test. Then click on “Correct My Answers” to see which questions you got wrong.
- Click on the green dots to see detailed solutions for each problem.

Score:

Correct



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