Thank you for your interest in the AP® Precalculus course at Aim Academy Online! Please complete the application and email it to me at shabacivch@aimacademy.online. Once I have approved your applications, you may proceed with registration at Aim Academy.

Requires hours: 8-10 hours per week (this will depend on student's individual ability).

Student Name	
Gender	
Age	
Birthday	
Grade Next Year	
Student Email	
Mailing Address	
Parent Name(s)	_____ _____
Parent Email(s)	
Parent Phone(s)	

Please list the previous coursework in math, starting with Algebra 1. Complete as much information as you can.

Course Name	Year(s) Taken	Curriculum Used	Grades Earned
Algebra I			
Geometry			
Algebra II			
Other			

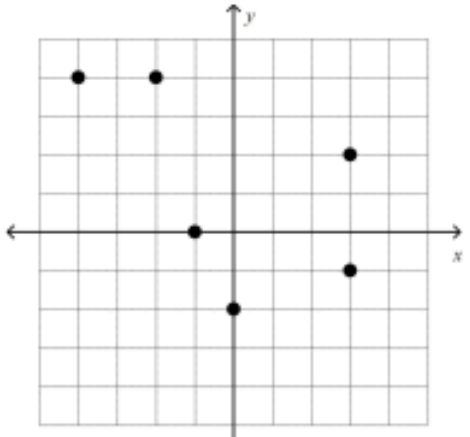
Please complete the placement test without the use of books or calculators and give your answers below:

#	Answer
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	

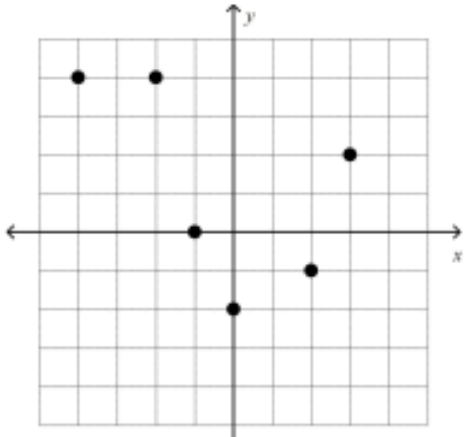
AP Precalculus Placement Test

____ 1. Which relation is a function?

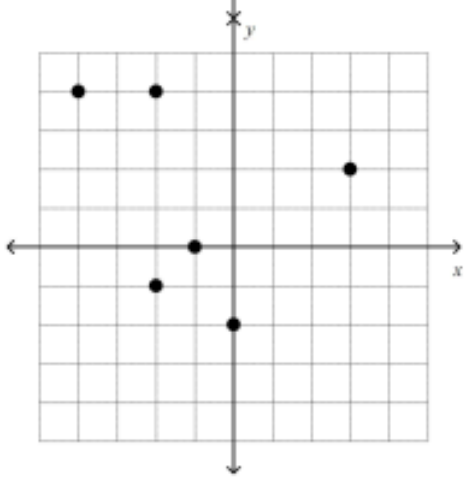
A



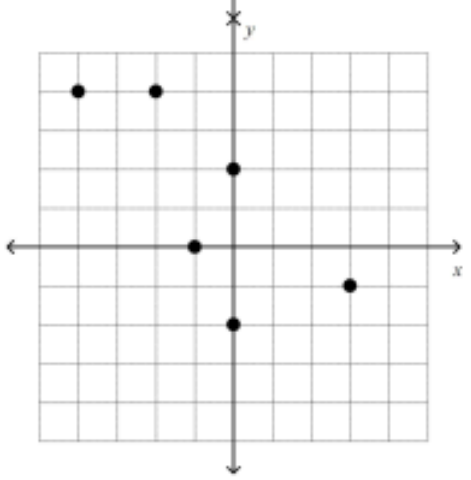
C



B



D



____ 2. If $g(x) = x^2 + 4x - 5$, find $g(-4)$.

A –85
B 27
C 5
D –5

____ 3. Write an expression that can be used to find the nth term of the sequence.

Term Number (n)	1	2	3	4
Term	7	10	13	16

A $3n + 4$
B $4n$
C $4n + 3$
D $3n$

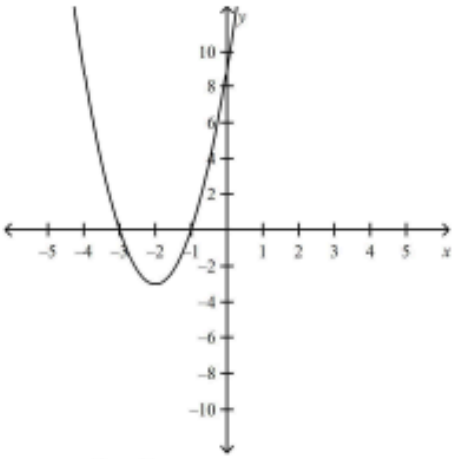
____ 4. Describe how the graph of the function is related to the graph of $f(x) = x^2$.

$g(x) = x^2 - 7$

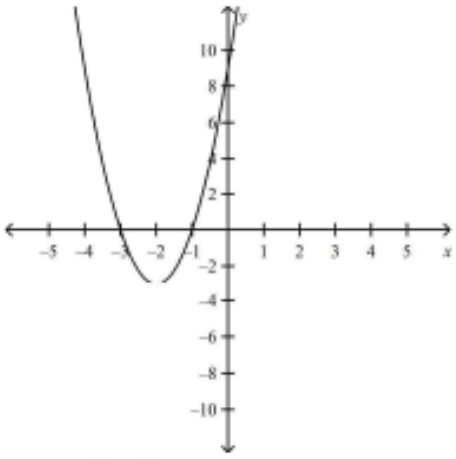
A translation up 7 units
B dilation compressed vertically
C translation down 7 units
D reflection

____ 5. Identify the coordinates of the vertex, the equation of the axis of symmetry, and the direction of the opening of the parabola with the equation $y = 3x^2 + 12x + 9$. Then graph the parabola.

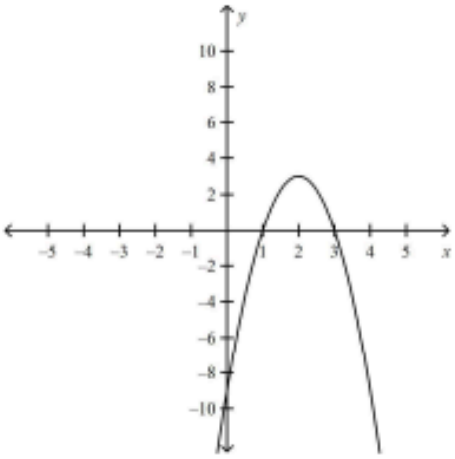
A vertex: (–2, –3)
axis of symmetry: $y = -3$
opens upward



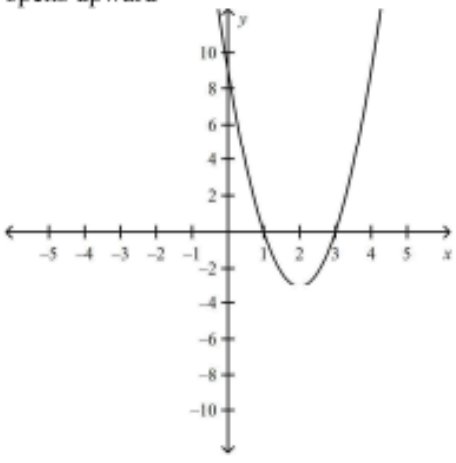
C vertex: (–2, –3)
axis of symmetry: $x = -2$
opens upward



B vertex: (2, –3)
axis of symmetry: $x = 2$
opens downward



D vertex: (2, –3)
axis of symmetry: $x = 2$
opens upward



____ 6. Solve $12x^2 - 14x + 4 = 0$.

A $\left\{\frac{2}{3}, \frac{1}{2}\right\}$

B $\left\{2, \frac{6}{2}\right\}$

C $\{-6, -8\}$

D $\{6, 8\}$

Perform the indicated matrix operation.

____ 7. $3\begin{bmatrix} 5 & 2 \\ -4 & -5 \end{bmatrix} - 2\begin{bmatrix} 0 & 4 \\ -4 & -10 \end{bmatrix}$

A $\begin{bmatrix} 15 & -2 \\ 8 & -7 \end{bmatrix}$

B $\begin{bmatrix} 15 & -2 \\ -4 & 5 \end{bmatrix}$

C $\begin{bmatrix} -5 & 2 \\ 0 & -5 \end{bmatrix}$

D $\begin{bmatrix} 7 & 6 \\ 8 & -7 \end{bmatrix}$

____ 8. Find the coordinates of the vertices of the image of ΔMNO with $M(-1, -2)$, $N(-6, 2)$, and $O(5, 6)$ after a reflection across the y-axis.

A $M'(-1, 2)$, $N'(-6, -2)$, and $O'(5, -6)$

B $M'(-2, -1)$, $N'(2, -6)$, and $O'(6, 5)$

C $M'(-2, 1)$, $N'(2, 6)$, and $O'(6, -5)$

D $M'(1, -2)$, $N'(6, 2)$, and $O'(-5, 6)$

____ 9. Write the equation for a circle that satisfies the given conditions.

center $\left(11, -2\right)$, radius 9 units

A $(x-11)^2 + \left(y-2\right)^2 = 81$

B $(x-11)^2 + \left(y+2\right)^2 = 81$

C $(x-11)^2 + \left(y+2\right)^2 = 9$

D $(x+11)^2 + \left(y+2\right)^2 = 81$

____ 10. $(4p^5)^5 =$

A $4p^{10}$

B $4p^{25}$

C $1{,}024p^{10}$

D $1{,}024p^{25}$

____ 11. Write $\frac{1}{64}$ using a negative exponent.

A $\frac{1}{-8^2}$

B $\frac{1}{8^{-2}}$

C 8^{-2}

D -8^2

____ 12. Write $\left(x^{13}\right)^{\frac{5}{7}}$ in radical form.

A $\sqrt[7]{x^{13}}$

B $\sqrt[7]{x^{65}}$

C $\sqrt[5]{x^7}$

D $\sqrt[7]{x^5}$

____ 13. Write an equation of the line that passes through $\left(-4,-2\right)$ and $\left(1,5\right)$.

A $y=\frac{7}{5}x+\frac{18}{5}$

B $y=\frac{7}{5}x-\frac{5}{18}$

C $y=\frac{7}{5}x-\frac{18}{5}$

D $y=-\frac{7}{5}x+\frac{18}{5}$

____ 14. Find the product.

$(-6k+4)\left(-7k^2+2k-7\right)$

A $-7k^2-4k-3$

B $42k^3-40k^2+50k-28$

C $-42k^3-40k^2-34k-28$

D $-7k^2-12k-28$

____ 15. Find $\left[g\circ h\right](x)$ and $[h\circ g](x)$.

$g(x)=3x$

$h(x)=-6x-5$

A $[g\circ h](x)=-18x^2-15x$
$[h\circ g](x)=-18x^2-5x$

B $[g\circ h](x)=-18x-15$
$[h\circ g](x)=-18x-5$

C $[g\circ h](x)=-18x+15$
$[h\circ g](x)=-18x+5$

D $[g\circ h](x)=-18x-15$
$[h\circ g](x)=-18x-15$

____ 16. Write an equation for the inverse of the function $y = \frac{7x - 3}{10}$.

A $y = \frac{10x - 3}{7}$

B $y = \frac{7x - 10}{3}$

C $y = \frac{7x + 10}{3}$

D $y = \frac{10x + 3}{7}$

____ 17. If you know the adjacent side and the hypotenuse, which trigonometric ratio should you use?

A tangent
B Pythagorean Theorem
C cosine
D sine

____ 18. Simplify $\left(\frac{2a}{a^2}\right)^{-2}$.

A $\frac{1}{4a^2}$

B $\frac{a^2}{-4}$

C $\frac{a^2}{4}$

D $\frac{4}{a^2}$

____ 19. Solve the system of equations.

$-3x - 2y = -5$

$7x + 6y = 1$

A $(-8, 7)$
B $(1, -1)$
C $(7, -8)$
D $(-1, 1)$

____ 20. If $f(x) = \ln(2x)$, then $f^{-1}(x) =$ ___?___.

A $\frac{e^x}{2}$

B $\log(2x)$

C $\ln\frac{1}{2x}$

D 10^{2x}