

Green!

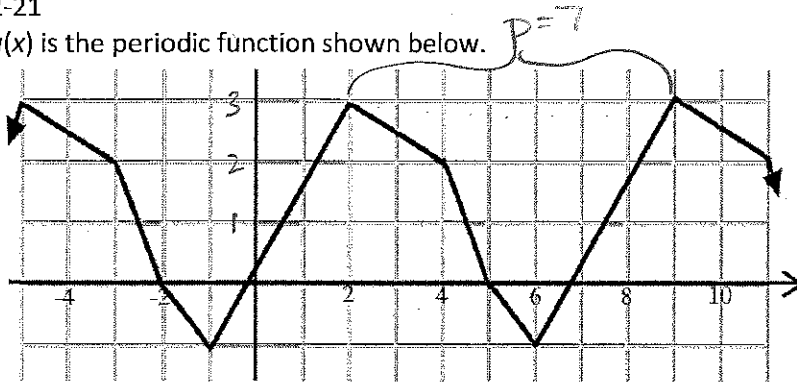
Pre Calculus
Golden Ticket
Quiz 2.1 – 2.3.2

Name Maria
Period _____ Date _____

Work with your assigned teams to complete the following problems. These problems are designed to prepare you for your Quiz 2.1 – 2.3.2. This is due at the end of class today.

2-21

$g(x)$ is the periodic function shown below.



a. What is the period of $g(x)$? period is 7.

b. Name six values of x where $y = 1$. $x = 1/2, 4.5, 7.5, 11.5, 14.5, 18.5, 21.5$

Name four values of x where $y = -1$ $x = -1, 6, 13, 20$

c. What is $g(53)$? = 2

What is $g(-29)$? = -1

What is $g(69)$? = -1

2-42

Expand each of the following sums. Then find them.

a. $\sum_{n=1}^4 n^2 = 1^2 + 2^2 + 3^2 + 4^2 = 1 + 4 + 9 + 16 = 30$

b. $\sum_{j=2}^6 6j - j^2 = \overset{12-4}{8} + \overset{18-9}{9} + \overset{24-16}{8} + \overset{30-25}{5} + \overset{36-36}{0} = 30$

c. $\sum_{i=3}^6 3^i = 3^3 + 3^4 + 3^5 + 3^6 = 1080$

2-43 (For more practice, try 2-72 and 2-85)

Write the following expression using summation notation:

$$1^2 + 2^2 + 3^2 + \dots + 9^2 + 10^2$$

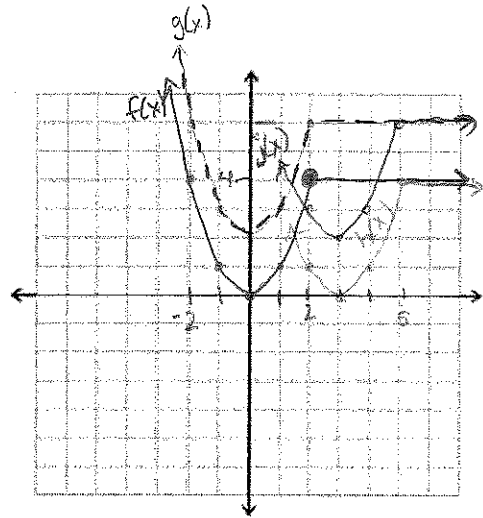
$$\sum_{k=0}^9 (k+1)^2 \quad \text{OR} \quad \sum_{k=1}^{10} k^2$$

2-76 (For more practice, try 2-90, 2-102, 2-116)

Define $f(x) = \begin{cases} x^2 & \text{for } x < 2 \\ 4 & \text{for } x \geq 2 \end{cases}$

- a. Find $f(-2) = 4$
 Find $f(2) = 4$
 Find $f(10) = 4$

b. Graph $f(x)$ on the grid at the right.



- c. Graph $g(x) = f(x) + 2$ using a second color
 Write an equation for $g(x)$ in terms of x :

$$g(x) = \begin{cases} x^2 + 2, & x < 2 \\ 6, & x \geq 2 \end{cases}$$

- d. Graph $h(x) = f(x - 3)$ using a third color
 Write an equation for $h(x)$ in terms of x :

$$h(x) = \begin{cases} x^2 - 6x + 9, & x < 5 \\ 4, & x \geq 5 \end{cases}$$

$$(x-3)^2 = (x-3)(x-3) \\ x^2 - 6x + 9$$

- e. Graph $j(x) = f(x - 3) + 2$ using a fourth color
 Write an equation for $j(x)$ in terms of x :

$$j(x) = \begin{cases} x^2 - 6x + 11, & x < 5 \\ 6, & x \geq 5 \end{cases}$$

2-98 (For more practice, try 2-101, 2-112, 2-127, 2-132)

Write the sigma notation that represents $A(\sqrt{x^2 + 2}, 3 \leq x \leq 5)$ using 4 left-endpoint rectangles.

$$.5 \sum_{k=0}^3 \left(\sqrt{(.5k+3)^2 + 2} \right)$$

$2 \div 4 = .5$

Write the sigma notation that represents $A(\sqrt{x^2 + 2}, 3 \leq x \leq 5)$ using 4 right-endpoint rectangles.

$$.5 \sum_{k=1}^4 \left(\sqrt{(.5k+3)^2 + 2} \right)$$