Name: _____ Date: _____

Algebra Regents Questions

Extra Credit

1 If $f(x) = \frac{3x+4}{2}$, then $f(8)$ is

(1) 21
(3) 14
(2) 16
(4) 4

4 Given the relation $R = \{(-4,2), (3,6), (x,8), (-1,4)\}$

Which value of x would make this relation a function?

(1) -4
(3) 3
(2) -1
(4) 0

5 If the point $(K,-5)$ lies on the line whose equation is $3x + y = 7$, then the value of K is

(1) -8
(3) 22
(2) -4
(4) 4

6 The expression $\frac{1}{3}x(6x^2 - 3x + 9)$ is equivalent to

(1) $2x^2 - x + 3$
(3) $2x^3 - x^2 + 3x$
(2) $2x^2 + 3x + 3$
(4) $2x^3 + 3x^2 + 3x$

8 What is the constant term of the polynomial $4d + 6 + 3d^2$?

(1) 6
(3) 3
(2) 2
(4) 4

16 When $3x^2 + 7x - 6 + 2x^3$ is written in standard form, the leading coefficient is

(1) 7
(2) 2
(3) 3
(4) -6

17 Which of the equations below have the same solution?

I. $10(x - 5) = -15$

II. $4 + 2(x - 2) = 9$

III. $\frac{1}{3}x = \frac{3}{2}$

(1) I and II, only
(2) I and III, only
(3) II and III, only
(4) I, II, and III

19 In the process of solving the equation $10x^2 - 12x - 16x = 6$, George wrote $2(5x^2 - 14x) = 2(3)$, followed by $5x^2 - 14x = 3$. Which properties justify George's process?

A. addition property of equality
B. division property of equality
C. commutative property of addition
D. distributive property

(1) *A* and *C*
(2) *A* and *B*
(3) *D* and *C*
(4) *D* and *B*

24 The volume of a trapezoidal prism can be found using the formula $V = \frac{1}{2}a(b + c)h$. Which equation is correctly solved for b?

(1) $b = \frac{V}{2ah} + c$
(2) $b = \frac{V}{2ah} - c$
(3) $b = \frac{2V}{ah} + c$
(4) $b = \frac{2V}{ah} - c$

21 A swimmer set a world record in the women's 1500-meter freestyle, finishing the race in 15.42 minutes. If 1 meter is approximately 3.281 feet, which set of calculations could be used to convert her speed to miles per hour?

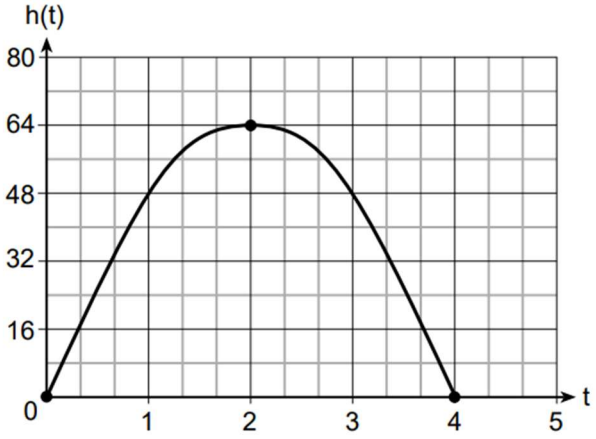
(1) $\frac{1500\,\text{meters}}{15.42\,\text{min}} \bullet \frac{60\,\text{min}}{1\,\text{hour}} \bullet \frac{1\,\text{meter}}{3.281\,\text{feet}} \bullet \frac{1\,\text{mile}}{5280\,\text{feet}}$

(2) $\frac{1500\,\text{meters}}{15.42\,\text{min}} \bullet \frac{60\,\text{min}}{1\,\text{hour}} \bullet \frac{3.281\,\text{feet}}{1\,\text{meter}} \bullet \frac{1\,\text{mile}}{5280\,\text{feet}}$

(3) $\frac{1500\,\text{meters}}{15.42\,\text{min}} \bullet \frac{3.281\,\text{feet}}{1\,\text{meter}} \bullet \frac{1\,\text{mile}}{5280\,\text{feet}}$

(4) $\frac{1500\,\text{meters}}{15.42\,\text{min}} \bullet \frac{60\,\text{min}}{1\,\text{hour}} \bullet \frac{1\,\text{mile}}{5280\,\text{feet}}$

22 The diagram below shows the graph of $h(t)$, which models the height, in feet, of a rocket t seconds after it was shot into the air.



The domain of $h(t)$ is

(1) (0,4)

(2) [0,4]

(3) (0,64)

(4) [0,64]