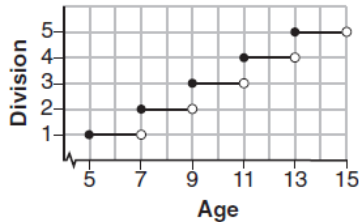


Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Class: \_\_\_\_\_

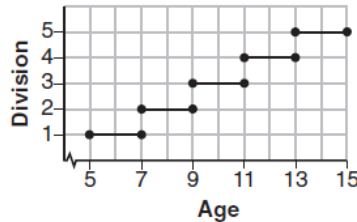
Algebra  
 Review  
 Graded Homework 21

Show all of your work for every problem. The numbers in the brackets are the points that each problem is worth. Multiple Choice Problems are worth 3.  
 NO WORK = ZERO CREDIT

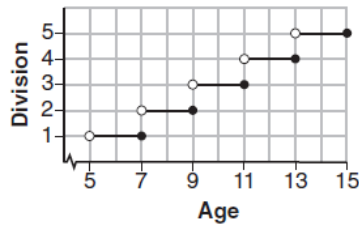
- 1) [3] Morgan can start wrestling at age 5 in Division 1. He remains in that division until his next odd birthday when he is required to move up to the next division level. Which graph correctly represents this information?



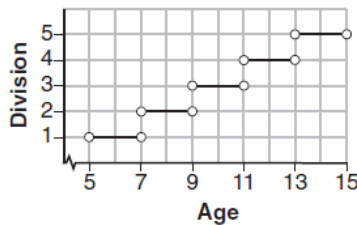
(1)



(3)



(2)



(4)

- 2) [3] What are the zeros of the function  $f(x) = x^2 - 13x - 30$ ?

- (1)  $-10$  and  $3$                       (3)  $-15$  and  $2$   
 (2)  $10$  and  $-3$                       (4)  $15$  and  $-2$

- 3) [3] Joey enlarged a 3-inch by 5-inch photograph on a copy machine. He enlarged it four times. The table below shows the area of the photograph after each enlargement.

Enlargement	0	1	2	3	4
Area (square inches)	15	18.8	23.4	29.3	36.6

What is the average rate of change of the area from the original photograph to the fourth enlargement, to the *nearest tenth*?

- 4) [4] Factor completely:  $28x^2 - 87x + 54$

- 5) [3] A laboratory technician studied the population growth of a colony of bacteria. He recorded the number of bacteria every other day, as shown in the partial table below.

<b>t</b> (time, in days)	0	2	4
<b>f(t)</b> (bacteria)	25	15,625	9,765,625

Which function would accurately model the technician's data?

- (1)  $f(t) = 25^t$                       (3)  $f(t) = 25t$   
(2)  $f(t) = 25^{t+1}$                 (4)  $f(t) = 25(t + 1)$
- 6) [4] The function  $V(t) = 1350(1.017)^t$  represents the value  $V(t)$ , in dollars, of a comic book  $t$  years after its purchase. The yearly rate of appreciation of the comic book is  
(Appreciation means the % rate of growth)

What is the total amount the value changes between the final value after the 6<sup>th</sup> and 8<sup>th</sup> years?

- 7) [3] Natasha is planning a school celebration and wants to have live music and food for everyone who attends. She has found a band that will charge her \$750 and a caterer who will provide snacks and drinks for \$2.25 per person. If her goal is to keep the average cost per person between \$2.75 and \$3.25, how many people,  $p$ , must attend?
- (1)  $225 < p < 325$                       (3)  $500 < p < 1000$   
(2)  $325 < p < 750$                       (4)  $750 < p < 1500$

- 8) [2] Graph the function  $y = |x - 3|$