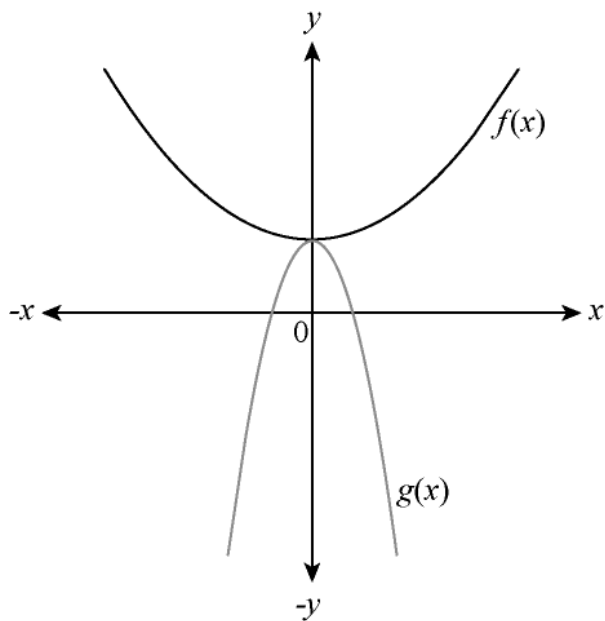


1 Expectation: A.9(B)

Let a , b , and c be real numbers. The graphs of two quadratic functions, $f(x) = ax^2 + c$ and $g(x) = bx^2 + c$, are shown below.



Based on the graphs, which of the following inequalities relates a and b correctly?

- A** $\frac{b}{a} > 1$
- B** $a - b < -1$
- C** $a + b < 0$
- D** $ab > 0$

2 Expectation: A.1(B)

Alejandro drove at a constant speed from Midland to Odessa on Interstate 20. He started driving at mile marker 136 at 8:20 a.m. and reached mile marker 116 in Odessa at 8:36 a.m. Below is a table of mile markers along Alejandro's route and the time at which he reached them. For reference, consecutively numbered mile markers are 1 mile apart.

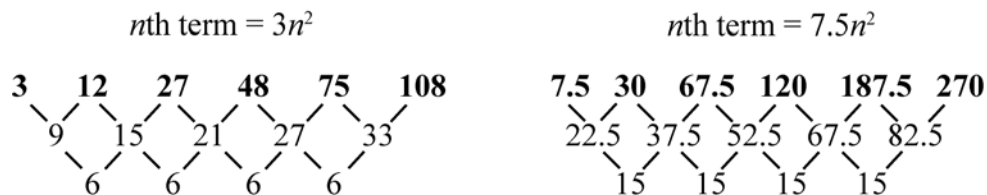
Mile Marker	Time
136	8:20 a.m.
131	8:24 a.m.
126	8:28 a.m.
121	8:32 a.m.
116	8:36 a.m.

Which function represents the number of minutes Alejandro drove to reach mile marker m on his route?

- F** $t(m) = 136m - 20$
- G** $t(m) = -0.8m + 108.8$
- H** $t(m) = 116m + 16$
- J** $t(m) = -1.25m + 170$

3 Expectation: A.3(B)

Two quadratic sequences are shown below in bold. Each number on the lines below is equal to the difference between the two numbers above it.



The following sequence of algebraic expressions is also quadratic.

$$x, \quad x + a, \quad x + (b + a), \quad x + 3b$$

The n th term of this sequence is equal to xn^2 . Based on the previous examples, what is the value of x ?

- A $b - a$
- B $\frac{b - a}{2}$
- C $(b - a)^2$
- D $\frac{(b - a)^2}{2}$

4 Expectation: A.6(F)

The manager of Greenway Grocery ordinarily orders 50 boxes of Oati-O's cereal from their supplier every week and sells each box for \$3.50. The manager uses the following function to find how much net profit the store makes on the week from selling x boxes of Oati-O's cereal.

$$p(x) = 3.50x - 112.50$$

Last week, the manager changed the profit function to the following to reflect changes in store policy.

$$p(x) = 3.50x - 90$$

Which of the following could be the change in store policy?

- F** The store now pays their supplier 25 cents less per box.
- G** The store now pays their supplier 25 cents more per box.
- H** The manager now orders 40 boxes each week instead of 50.
- J** The manager now orders 60 boxes each week instead of 50.

5 Expectation: A.6(C)

The graph of the linear equation $y = mx + b$ has an x -intercept of 1. What is the x -intercept of the graph of the linear equation $y = -mx - b$?

- A** -1
- B** 0
- C** 1
- D** 2

6 Expectation: A.7(B)

A swimmer plans to swim at least 100 laps during a 6-day period. During this period, the swimmer will increase the number of laps completed each day by one lap. What is the least number of laps the swimmer must complete on the first day?

	1	5						
+	0	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9



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Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Correct Answer
1	5	Supporting	A.9(B)	C
2	1	Supporting	A.1(B)	G
3	2	Supporting	A.3(B)	B
4	3	Readiness	A.6(F)	H
5	3	Readiness	A.6(C)	C
6	4	Readiness	A.7(B)	15