2015

34 A company produces packs of pencils and pens.

- The company produces at least 100 packs of pens each day, but no more than 240.
- The company produces at least 70 packs of pencils each day, but no more than 170.
- A total of less than 300 packs of pens and pencils are produced each day.
- Each pack of pens makes a profit of $1.25.
- Each pack of pencils makes a profit of $0.75.

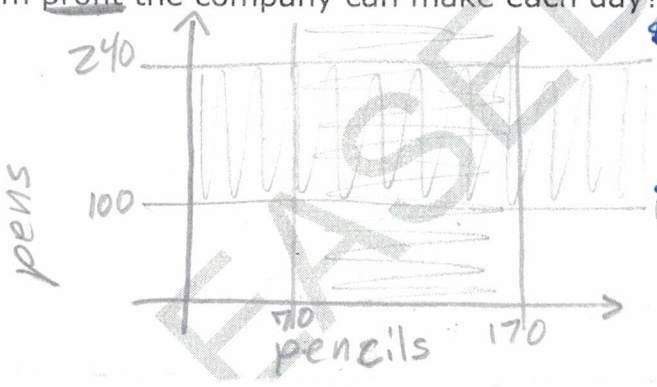
What is the maximum profit the company can make each day?

✓ A $338.75

B $344.25

C $352.50

D $427.50



$x + y < 300$

pencils	max # pens	total
70 ($338.75)	229	<300
71	228	↑ use 299
72	227	
↓		
170 ($288.75)	129	

38 The value of an antique car is modeled by the function $V(x) = 107{,}000(1.009)^{\left(\frac{2}{3}x\right)}$ where x is the number of years since 2005. By what ***approximate*** percent rate is the value of the car increasing per year?

exponent = $\frac{2}{3}x$

A 0.04%

B 0.14%

✓ C 0.60%

D 1.40%

$1.009 = 1 + \text{interest rate}$ $\quad .009 = \frac{i}{2/3}$ $\quad i = .009\left(\frac{2}{3}\right)$

$= .006$

$= .6\%$

39 The table below shows the cost of a pizza based on the number of toppings.

Number of Toppings (n)	**Cost** (C)
1	\$12
2	\$13.50
3	\$15
4	\$16.50

x y

$y = 1.5x + 10.5$ by "linreg" for line of best fit

Which function represents the cost of a pizza with n toppings?

✓ A $C(n) = 12 + 1.5(n - 1)$ → $= 12 + 1.5n - 1.5$

$= 10.50 + 1.5n$

$= 1.5x + 10.50$

B $C(n) = 1.5n + 12$

C $C(n) = 12 + n$

D $C(n) = 12n$

2015

48 The table below shows the shoe size and age of 7 boys.

actual

Name	Shoe Size (x)	Age (y)
Tyrone	6	9
Marcel	6	11
Patrick	7	15
Bobby	8	11
Dylan	9	15
Mike	10	16
Jonathan	12	17

predicted y's ← by line of best fit

10
10
11
13
14
15
17

← 10.853 = 10 yr's old

Approximately what percent of the boys' ages is more than 1 year different from the age predicted by the line of best fit for the data?

A 14%

B 29%

C 43%

D 57%

line of best fit "linreg":

$y = 1.126x + 4.097$

$\frac{2}{7} = 0.2857$

$\approx 29\%$

Note: key suggests C is the answer.
Work above supports "B" as the answer.