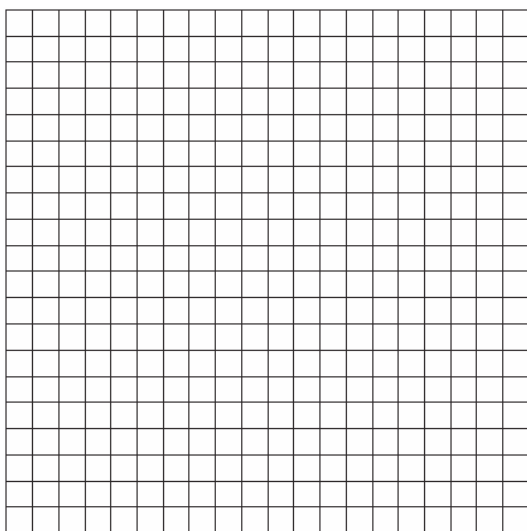


NAME: _____

1. 060228b, P.I. A2.A.3

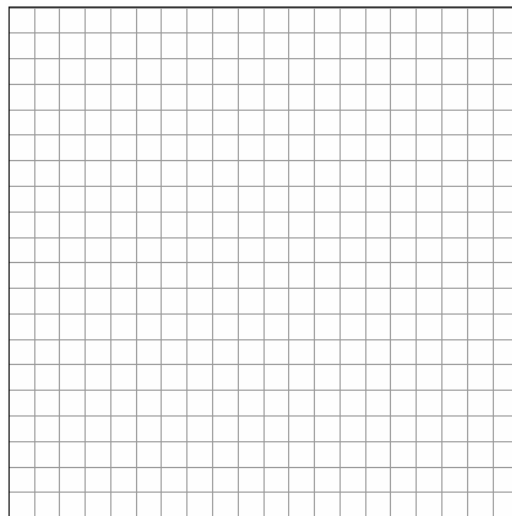
A pelican flying in the air over water drops a crab from a height of 30 feet. The distance the crab is from the water as it falls can be represented by the function $h(t) = -16t^2 + 30$, where t is time, in seconds. To catch the crab as it falls, a gull flies along a path represented by the function $g(t) = -8t + 15$. Can the gull catch the crab before the crab hits the water? Justify your answer. [The use of the grid is optional.]



2. 060328b, P.I. A2.A.3

The price of a stock, $A(x)$, over a 12-month period decreased and then increased according to the equation

$A(x) = 0.75x^2 - 6x + 20$, where x equals the number of months. The price of another stock, $B(x)$, increased according to the equation $B(x) = 2.75x + 1.50$ over the same 12-month period. Graph and label both equations on the accompanying grid. State all prices, to the *nearest dollar*, when both stock values were the same.



[4] Yes, and appropriate work is shown, and an appropriate justification is given.

[3] Appropriate work is shown, and an appropriate justification is given, but one computational error is made, or the negative value of t is not rejected.

[2] An appropriate graph or equation is shown, such as $16t^2 - 8t - 15 = 0$.

[1] An incorrect graph or equation of equal difficulty is used, but an appropriate solution is found.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[1] incorrect procedure.

[4] 9 and 26, and appropriate work is shown, such as graphing and labeling the equations and identifying the points of intersection.

[3] Both functions are graphed correctly, and the points of intersection are indicated, but the prices are not stated.

or [3] The parabola is graphed correctly, but the line is graphed incorrectly, but appropriate prices are stated.

[2] The line and the parabola are graphed and labeled, but a conceptual error is made, such as only one price is found because the graph of the parabola is incomplete.

or [2] The line is graphed correctly, but the parabola is graphed incorrectly, but appropriate prices are stated.

or [2] 9 and 26, but only an algebraic solution is shown.

[1] Both the line and the parabola are graphed incorrectly, but appropriate prices are stated.

or [1] 9 and 26, but no work is shown.

[0] 9 or 26, but no work is shown.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[2] obviously incorrect procedure.
