60 Which situation *most likely* requires an exact answer? **60** _____

A Aimee wants to know the average number of meters she swam each day for a month.

B Ricardo wants to know if he has enough money to pay for 4 CDs at the music store.

C Tracie wants to know how much it will cost to replace the brakes on her car.

D A writer wants to know the cost of printing a manuscript so she can invoice the editor.

E A biologist wants to know how many birds in the preserve are tagged and banded each week.

Read each question and write your answer in the space provided. Be sure to show all your work.

61 In a seafood pasta dish, Ju-Yi noticed three mussels to every two scallops. Write an equation to represent the relationship between the number of mussels m and the number of scallops s. [2]

62 Determine the intercepts of $y = 9x - 2$. [2]

63 Some domestic dogs can reach speeds up to 32 kilometers per hour when they are running hard. Leslie says that since there are about 3281 feet in a kilometer, that a domestic dog can run about 1750 feet in a minute. Use unit analysis to check Leslie's computation. If Leslie is incorrect, give the correct speed in feet per minute. [3]

64 What is the domain and range of $f(x) = 49 - x^2$? [2]

60 Which situation *most likely* requires an exact answer? **I.D.4.**

60 D

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61 In a seafood pasta dish, Ju-Yi noticed three mussels to every two scallops. Write an equation to represent the relationship between the number of mussels m and the number of scallops s. [2] **I.A.4.**

Sample answer: $m = \frac{3s}{2}$

62 Determine the intercepts of $y = 9x - 2$. [2] **II.B.5.**

$(0, -2), \left(\frac{2}{9}, 0\right)$

63 Some domestic dogs can reach speeds up to 32 kilometers per hour when they are running hard. Leslie says that since there are about 3281 feet in a kilometer, that a domestic dog can run about 1750 feet in a minute. Use unit analysis to check Leslie's computation. If Leslie is incorrect, give the correct speed in feet per minute. [3] **I.C.2.**

$\frac{32 \text{ km}}{1 \text{ hr}} \cdot \frac{3281 \text{ ft}}{1 \text{ km}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} = \frac{32 \cdot 3281 \text{ ft}}{60 \text{ min}} = \frac{104{,}992 \text{ ft}}{60 \text{ min}} \approx 1750 \text{ ft/min.}$

Leslie's computation is correct.

64 What is the domain and range of $f(x) = 49 - x^2$? [2] **III.A.1.**

The domain is all real numbers.

The range is $f(x) \leq 49$.