

26.

$$26.2 \text{ MILES} = 26.2 \text{ MILES} \cdot \left(\frac{1.609 \text{ KM}}{1 \text{ MILE}} \right) \cdot \left(\frac{1 \text{ HR}}{12 \text{ KM}} \right) = 3.5 \text{ HOURS}$$

27. $1.8 - 0.4y \geq 2.2 - 2y$

$$1.6y \geq .4$$

$$y \geq \frac{.4}{1.6}$$

$$y \geq \frac{1}{4}$$

28. THE EXPRESSION IS IRRATIONAL BECAUSE $\sqrt{5}$ IS IRRATIONAL AND ANY COMBINATION OF IT WITH RATIONALS WILL REMAIN IRRATIONAL.

30.

$$C = 1.29 + .99(S-1)$$

WHEN $S=52$

$$C = 1.29 + .99(52)$$

$$C = 51.78$$

SANDY IS NOT CORRECT.

31.

$$\begin{array}{r|l} T & D \\ \hline 2 & 140 \\ \hline 7 & 480 \end{array}$$

$$\frac{480-140}{7-2} = \frac{340}{5} = 68 \frac{\text{MILES}}{\text{HR}}$$

32.

THE GRAPH OF A CIRCLE IS
NOT A FUNCTION BECAUSE
IT FAILS THE VERTICAL LINE TEST
(A SINGLE VALUE OF x , CAN
CORRESPOND TO TWO y VALUES.)

HOWEVER MIA IS ALSO INCORRECT
BECAUSE OF THE JUSTIFICATION
SHE GAVE — HAVING MULTIPLE VALUES
OF x FOR THE SAME y -VALUE
SHOWS THE GRAPH IS NOT ONE-TO-ONE,
BUT DOES NOT ADDRESS IF IT IS
A FUNCTION IN THE FIRST PLACE.

34.

LET

P = PRICE FOR 1 PIZZA

S = PRICE FOR 1 SODA

$$15.95 = P + 2S$$

$$45.90 = 3P + 5S$$

THIS SYSTEM HAS A
SOLUTION OF

$$S = \$1.95$$

$$P = \$12.05$$

35.

LINEAR FUNCTION
HAS FORM

$$f(x) = Mx + B$$

TO FIND M, CAN USE

$$\frac{9 - 7.50}{6 - 4} = \frac{1.50}{2} = .75$$

TO FIND B, CAN USE

$$7.50 = (.75)(4) + B$$

$$7.50 = 3 + B$$

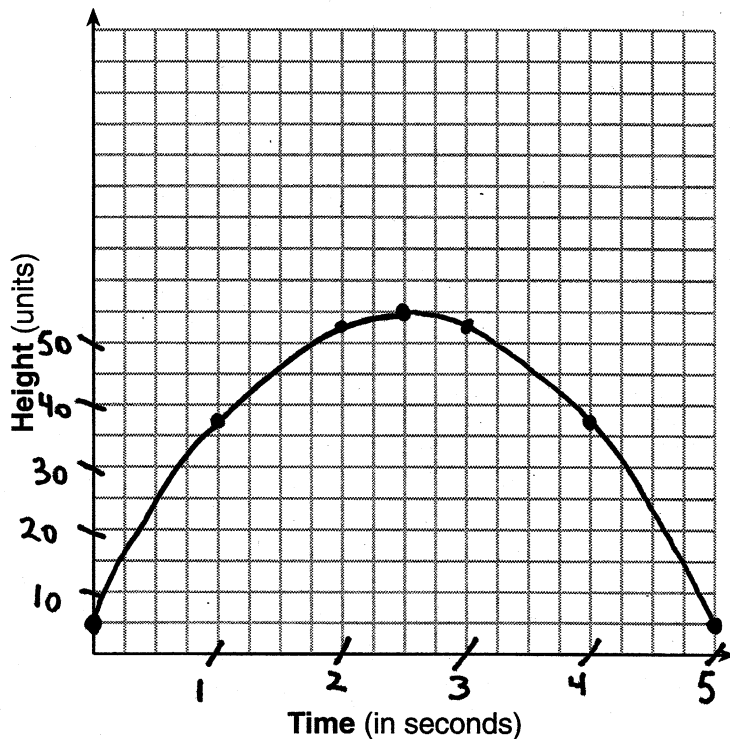
$$4.50 = B$$

SO LINEAR FUNCTION
IS GIVEN BY

$$f(x) = (.75)x + 4.50$$

THERE IS AN INITIAL COST
OF \$4.50 BEFORE ANY
CARDS ARE MADE, AND
THEN IT COST \$.75 FOR
EACH ADDITIONAL CARD

36.



State the coordinates of the vertex and explain its meaning in the context of the problem.

VERTEX IS AT

$$x = -\frac{B}{2A} = \frac{-40}{2(-8)} = +\frac{5}{2}$$

$$y = -8\left(\frac{5}{2}\right)^2 + 40\left(\frac{5}{2}\right) + 5 = 55$$

MAX HT AT

$$\left(\frac{5}{2}, 55\right)$$

37. LET

I = AMOUNT IAN OWES

K = AMOUNT KEN OWES

$$I = 1000 - 60M$$

$$K = 600 - 20M$$

THEY WILL OWE THE SAME AMOUNT
WHEN

$$1000 - 60M = 600 - 20M$$

$$400 = 40M$$

$$10 = M$$

SIX MONTHS LATER,

$$M = 16$$

$$I = 1000 - 60(16) = 40$$

IAN IS NOT CORRECT.