LEARNING PAPER EVIDENCE

Finding inputs and outputs of a two-step function that models a real-world situation: Function notation

Henry is a software salesperson. His base salary is $ 1,500 and he makes $ 80 more for every copy of *Math is Fun* he sells. His total pay, (in dollars), after selling c copies is given by the following function.

$$P(c) = 1{,}500 + 80c$$

Answer the following questions.

(a) If Henry's total pay is $\$3{,}980$, how many copies did he sell?

☐ copies

(b) What is Henry's total pay if he sells 22 copies?

$☐

A railroad crew can lay 5 miles of track each day. They need to lay 145 miles of track. The length, L (in miles), that is left to lay after d days is given by the following function.

$$L(d) = 145 - 5d$$

Answer the following questions.

(a) How many days will it take the crew to lay all the track?

☐ days

(b) How many miles of track does the crew have left to lay after 17 days?

☐ miles

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(1)(a) $P(c) = 1500 + 80c$

$3980 = 1500 + 80c$

$-1500 \quad -1500$

$\frac{2480}{80} = \frac{80c}{80} \Rightarrow 31 = c \rightarrow c = 31$ (COPIES)

(1)(b) $P(c) = 1500 + 80c$

$P(22) = 1500 + 80(22)$

$P(22) = 1500 + 1760$

$P(22) = 3260$ (TOTAL PAY IN DOLLARS)

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(2)(a) $L(d) = 145 - 5d$

$0 = 145 - 5d$

$+5d \qquad +5d$

$\frac{5d}{5} = \frac{145}{5} \Rightarrow d = 29$ (days)

(2)(b) $L(d) = 145 - 5d$

$L(17) = 145 - 5(17)$

$L(17) = 145 - 85$

$L(17) = 60$ (MILES LEFT)

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