2. Which of the following are correct calculations for difference quotient of: $u\left(y\right)=5\ y+5$ $u\left(y\right)=5\ y+5$ $u\left(y+h\right)=5\ (h+y)+5$

$$u(y+h) = 5 (h + y) + 5$$

$$= 5 h + 5 y + 5$$

$$\frac{u(y+h) - u(y)}{h} = \frac{(5 h+5 y+5) - (5 (y+1) + 5)}{h}$$

$$= \frac{5 h}{h}$$

$$= \frac{h(5)}{h}$$

$$= 5$$

$$u(y) = 5 y + 5$$

$$u(y) = 5 y + 5$$

$$u(y) = 5 y + 5$$

$$\begin{array}{c} u\left(y+h\right) = 5 & (h+y) + 5 \\ = 5 & h + 5 & y + 10 \\ \frac{u\left(y+h\right) - u\left(y\right)}{h} = \frac{(5 & h+5 & y+10) - (5 & y+5)}{h} \\ = \frac{5 & h}{h} \\ = \frac{h\left(5\right)}{h} \\ = 5 \end{array}$$

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\begin{array}{c} u\left(y\right) = 5 \ y + 5 \\ u\left(y + h\right) = 5 \ (h + y) + 5 \\ = 5 \ h + 5 \ y + 5 \\ \frac{u\left(y + h\right) - u\left(y\right)}{h} = \frac{(5 \ h + 5 \ y + 5) - (5 \ y + 5)}{h} \\ = \frac{5 \ h}{h} \\ = \frac{h\left(5\right)}{h} \\ = 5 \end{array}
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$$\begin{array}{l} u\;(\,y\,) = 5\;\,y \;+\; 5 \\ u\;(\,y + h\,) = 5\;\,(\,h \;+\; y\,) \;\; +\; 5 \\ = 5\;\,h \;+\; 5\;\,y \\ \frac{u\;(\,y + h\,) \;-\; u\;(\,y\,)}{h} = \frac{(\,5\;h + 5\;y + 15\,) \;-\; (\,5\;y + 5\,)}{h} \\ = \frac{5\;h}{h} \\ = \frac{h\;(\,5\,)}{h} \\ = 5 \end{array}$$

Solution