

Wednesday 09/22/2017

SAT

Which of the following is equivalent to $\frac{4x^2 + 6x}{4x + 2}$?

A) x

B) $x + 4$

C) $x - \frac{2}{4x + 2}$

D) $x + 1 - \frac{2}{4x + 2}$

Synthetic:

ONLY when you
are $\div$ by a linear
factor with $a=1$

$$\frac{4x^2}{4x} = x$$

$$\begin{array}{r} x+1 \\ 4x+2 \overline{) 4x^2+6x} \\ \underline{4x^2+2x} \\ 4x+0 \\ \underline{-(4x+2)} \\ -2 \end{array}$$

$$x+1 - \frac{2}{4x+2}$$

Quotient + $\frac{\text{Remainder}}{\text{Divisor}}$

2nd method

Common denominator

$$\begin{aligned} & \frac{x}{1} - \frac{2}{4x+2} \\ &= \frac{x(4x+2) - 2}{4x+2} \\ &= \frac{4x^2 + 2x - 2}{4x+2} \end{aligned}$$

No

$$\begin{aligned} & \frac{x+1}{1} - \frac{2}{4x+2} \\ &= \frac{(x+1)(4x+2) - 2}{4x+2} \\ &= \frac{4x^2 + 2x + 4x + 2 - 2}{4x+2} \\ &= \frac{4x^2 + 6x}{4x+2} \text{ yes.} \end{aligned}$$