

Dividing a Polynomial by a Binomial

Divide the following. Write the remainders in fractional forms.

$$\textcircled{1} \quad h + 7 \overline{) h^2 - 3h - 80}$$

$$\textcircled{2} \quad x - 5 \overline{) x^3 - 5x^2 + 8x - 15}$$

$$\textcircled{3} \quad b + 6 \overline{) b^3 + 7b^2 + 3b - 24}$$

$$\textcircled{4} \quad k - 8 \overline{) -2k^2 + 9}$$

$$\textcircled{5} \quad p - 8 \overline{) -p^2 - 19}$$

$$\textcircled{6} \quad b + 6 \overline{) 3b^2 + b + 18}$$

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Answers

$$\textcircled{1} \quad h + 7 \overline{) h^2 - 3h - 80} \quad \begin{array}{l} h - 10 + \frac{-10}{h+7} \end{array}$$

$$\textcircled{2} \quad x - 5 \overline{) x^3 - 5x^2 + 8x - 15} \quad \begin{array}{l} x^2 + 8 + \frac{25}{x-5} \end{array}$$

$$\textcircled{3} \quad b + 6 \overline{) b^3 + 7b^2 + 3b - 24} \quad \begin{array}{l} b^2 + b - 3 + \frac{-6}{b+6} \end{array}$$

$$\textcircled{4} \quad k - 8 \overline{) -2k^2 + 9} \quad \begin{array}{l} -2k - 16 + \frac{-119}{k-8} \end{array}$$

$$\textcircled{5} \quad p - 8 \overline{) -p^2 - 19} \quad \begin{array}{l} -p - 8 + \frac{-83}{p-8} \end{array}$$

$$\textcircled{6} \quad b + 6 \overline{) 3b^2 + b + 18} \quad \begin{array}{l} 3b - 17 + \frac{120}{b+6} \end{array}$$