

Factoring Quiz Review

Date _____ Period _____

Factor the common factor out of each expression.

1) $8 + 6x$

$2(4 + 3x)$

2) $-30x^2 + 40x^3 + 10x^4$

$10x^2(-3 + 4x + x^2)$

Factor each completely.

3) $n^2 + 12n + 27$

$$\begin{array}{r} 27 \\ 9 \times 3 \\ \hline 6 \end{array}$$

$(n+9)(n+3)$

$$\begin{array}{r} -99 \\ -49 \times 2 \\ \hline -47 \end{array}$$

4) $7x^2 - 47x - 14$

$$\begin{array}{r} 7x + 2 \\ x \begin{array}{|c|c|} \hline 7x^2 & 2x \\ \hline -7 & -14 \\ \hline \end{array} \\ -7 \end{array}$$

$(7x+2)(x-7)$

5) $6a^2 - 17a - 45$

$$\begin{array}{r} -270 \\ 10 \times -27 \\ \hline -45 \end{array}$$

$$\begin{array}{r} 2a - 9 \\ 3a \begin{array}{|c|c|} \hline 6a^2 & -27a \\ \hline 5 & 10a \\ \hline \end{array} \\ 5 \end{array}$$

$(3a+5)(2a-9)$

6) $35b^3 - 21b^2 + 25b - 15$

$$\begin{array}{r} 5b - 3 \\ 7b^2 \begin{array}{|c|c|} \hline 35b^3 & -21b^2 \\ \hline 5 & 25b \\ \hline \end{array} \\ 5 \end{array}$$

$(7b^2+5)(5b-3)$

7) $r^3 + 6r^2 - 3r - 18$

$$\begin{array}{r} r \quad 6 \\ r^2 \begin{array}{|c|c|} \hline r^3 & 6r^2 \\ \hline -3 & -18 \\ \hline \end{array} \\ -3 \end{array}$$

$(r^2-3)(r+6)$

8) $16k^2 - 9$

$(4k+3)(4k-3)$

9) $64m^3 + 27$

$a = 4m \quad b = 3$

$(4m+3)(16m^2-12m+9)$

10) $125m^3 - 8$

$a = 5m \quad b = 2$

$(5m-2)(25m^2+10m+4)$