

1. Factor out the GCF. $15\beta^8 + 12\beta^5 + 18\beta^9$

A. $3\beta^3(4 + \beta^4 + 4\beta^2)$

B. $\beta^3(3\beta^2 + 3 + \beta^2)$

C. $\beta^2(\beta^2 + 4 + \beta^2)$

D. $3\beta^5(5\beta^3 + 4 + 6\beta^4)$

E. $\beta^3(2\beta^2 + 3 + \beta^2)$

F. $3\beta^3(2\beta^3 + 3\beta^2 + 3)$

G. $3\beta^4(4 + \beta + 4\beta^4)$

H. $4\beta^4(2\beta^3 + 3\beta^2 + 3)$

2. Factor the expression by grouping. $35tr + 28r\gamma - 30t\alpha - 24\alpha\gamma$

A. $(5t + 4\gamma)(7r - 6\alpha)$

B. $(6\alpha + 4\gamma)(5t + 7r)$

C. $(7r)(5t + 4\gamma - 6\alpha)$

D. $(5t)(6\alpha + 4\gamma + 7r)$

E. $(5t + 4\gamma)(7r + 6\alpha)$

F. $(7r)(6\alpha + 4\gamma + 5t)$

G. $(5t - 4\gamma)(7r + 6\alpha)$

H. $(6\alpha)(5t + 4\gamma + 7r)$

3. Factor out the GCF. $20\theta^7 - 8\theta^9 + 18\theta^6$

A. $2\theta^6(10\theta - 4\theta^3 + 9)$

B. $\theta^3(3\theta^4 - 3 + 3\theta^4)$

C. $\theta^3(4\theta^3 - 3 + 3\theta^3)$

D. $2\theta^5(3 - 3\theta^4 + \theta^4)$

E. $2\theta^4(3 - 3\theta + \theta)$

F. $2\theta^3(4\theta^5 - 2\theta^3 + 3)$

G. $2\theta(4\theta^5 - 2\theta^3 + 3)$

H. $\theta^5(2\theta^3 - 3 + 3\theta^3)$

4. Factor out the GCF. $(16s + 15)(9\gamma) - (16s + 15)(14\phi)$

A. $(9\gamma)(14\phi + 15 + 16s)$

B. $(9\gamma)(16s + 15 - 14\phi)$

C. $(16s)(14\phi + 15 + 9\gamma)$

D. $(16s + 15)(9\gamma + 14\phi)$

E. $(16s + 15)(9\gamma - 14\phi)$

F. $(14\phi + 15)(16s + 9\gamma)$

G. $(14\phi)(16s + 15 + 9\gamma)$

H. $(16s - 15)(9\gamma + 14\phi)$

5. Factor the expression by grouping. $35xu + 20u + 21xw + 12w$

A. $(7x + 4)(5u + 3w)$

B. $(7u + 4)(5x + 3w)$

C. $(5u)(3w + 4 + 7x)$

D. $(5u)(7x + 4 + 3w)$

E. $(7x + 4)(5w + 3u)$

F. $(3w)(7x + 4 + 5u)$

G. $(3w + 4)(7x + 5u)$

H. $(7x)(3w + 4 + 5u)$

6. Factor the expression by grouping. $14\alpha w - 21w + 10\alpha t - 15t$

A. $(7w)(2\alpha - 3 + 5t)$

B. $(7w)(5t + 3 + 2\alpha)$

C. $(2\alpha - 3)(7w + 5t)$

D. $(5t + 3)(2\alpha - 7w)$

E. $(2\alpha - 3)(7w - 5t)$

F. $(5t)(2\alpha - 3 + 7w)$

G. $(2\alpha)(5t + 3 + 7w)$

H. $(2\alpha + 3)(7w + 5t)$

7. Factor out the GCF. $9r^4 + 14r^6$

A. $2r^7(2r^8 + 1)$

B. $r(4r^5 + 2)$

C. $r^4(9 + 14r^2)$

D. $2r^5(2r^2 + 1)$

E. $r^3(2r^7 + 1)$

F. $r^2(4 + 3r)$

G. $r^4(4r^3 + 2)$

H. $r^2(2r + 1)$

8. Factor out the GCF. $-5b^3c^4 - 12b^3c^4$

A. $-b^3c^4(5 + 12)$

B. $bc^4(2b^2c^2 - 4)$

C. $-2b^4c^2(2b^2c^2 + 4)$

D. $-bc^4(2 + 3b^2c^2)$

E. $-b^3c^4(b^3 - 2c)$

F. $-b^3c(2b^4 + 3c^2)$

G. $3bc^3(b^4 - 2c^3)$

H. $2b^4c^3(2b + 3c^4)$