

GCF & Grouping Worksheet Answers Corrected

Math 4SN

Mr. Pemberton

1. Factor the following by GCF.

a. $6x + 36$
 $6(x + 6)$

b. $25x - 10$
 ~~$5(x-2)$~~ $5(5x-2)$

c. $8x^3 + 12$
 $4(2x^3 + 3)$

d. $x^3 + x$
 $x(x^2 + 1)$

e. $2x^4 + 6x^3$
 $2x^3(x + 3)$

f. $-144a^8 + 24a^6$
 $-24a^6(6a^2 - 1)$ OR $24a^6(-6a^2 + 1)$

g. $12x^2 + 16x - 8$
 ~~$4(x^2 + 4x - 2)$~~ $4(3x^2 + 4x - 2)$

h. $100 - 75z - 50z^2$
 $25(4 - 3z - 2z^2)$

i. $9x^4 + 6x^3 + 18x^2$
 $3x^2(3x^2 + 2x + 6)$

j. $10ab + 10a^2b$
 $10ab(1 + a)$

k. $15m^4n^3 - 25m^7n + 30m^4n^8$
 $5m^4n(3n^2 - 5m^3 + 6n^7)$

l. $4\Delta\blacklozenge + 8\Delta^2\blacklozenge - 24\Delta^4\blacklozenge^5$
 $4\Delta\blacklozenge(1 + 2\Delta - 6\Delta^3\blacklozenge^4)$

2. Factor the following by grouping.

a. $t^3 - 3t^2 + 2t - 6$
 $(t^2 + 2)(t - 3)$

b. $x^3 + 6x^2 + 2x + 12$
 $(x^2 + 2)(x + 6)$

c. $16x^3 + 8x^2 + 2x + 1$
 $(8x^2 + 1)(2x + 1)$

d. $4u^3 - 2u^2 - 6u + 3$
 $(2u - 1)(2u^2 - 3)$

e. $x^3 - x^2 - 3x + 3$
 $(x - 1)(x^2 - 3)$

f. $10x^3 + 5x^2 + 8x + 4$
 $(2x + 1)(5x^2 + 4)$

g. $x^3 + 3x^2 - 6x - 18$
 $(x + 3)(x^2 - 6)$

h. $p^3 + 2p^2 + 4p + 8$
 $(p + 2)(p^2 + 4)$

i. $h^2 - hk + hr - kr$
 $(h - k)(h + r)$

j. $p^2 - 2pq + pr - 2qr$
 $(p - 2q)(p + r)$

k. $3\Delta\blacklozenge - 2\blacklozenge - 12\Delta + 8$
 $(\blacklozenge - 4)(3\Delta - 2)$