3. Factor fully, if possible.

a) $15w + 25z$

b) $3a - 11b$

c) $17ca - 8cd$

d) $9y - 8y^3$

e) $12b^4 + 18b^2$

f) $4g^2 - 8g + 6$

g) $7h + 3m - 5k$

h) $2n^5 + 12n^4 - 6n^3$

4. Factor fully, if possible.

a) $14x^2y + 16xy^3$

b) $10k^3m^2 - 6k^2m^2$

c) $8s^2y + 11t^3$

d) $66c^4de^2 - 22c^2de^2$

e) $7gh + 2mn - 13pq$

f) $5fg^2 - 25fg + 20f^2g$

g) $27r^2s^2 - 18r^3s^2 - 36rs^3$

h) $4n^2p^3 + 10n^4p^2 - 12n^3p^2$

5. Factor, if possible.

a) $3x(x + 8) + 5(x + 8)$

b) $a(b + 1) + 9c(b + 1)$

c) $2y(x - 5) + 4(x + 5)$

d) $4s(r + u) - t(r + u)$

6. Factor by grouping.

a) $mx + my + 2x + 2y$

b) $x^2 + 3x + 2x + 6$

c) $ay^2 + 3ay + 4y + 12$

d) $6x^2 + 9x - 2x - 3$

e) $16v^2 - 12v - 12v + 9$

3.30 Common Factoring

Solutions to ALL of these can be found in Teams, Unit 1 - Quadratic Functions, Files, 1.30 Extra Questions

2. Find two integers with the given product and sum.

a) product = 45, sum = 14

b) product = 6, sum = −5

c) product = −10, sum = 3

d) product = −20, sum = −8

2. Factor, if possible.

a) $2x^2 + 7x + 5$

b) $6y^2 + 19y + 8$

c) $4k^2 + 15k + 9$

d) $3m^2 + 10m + 8$

e) $10w^2 + 15w + 3$

3. Factor, if possible.

a) $4x^2 - 11x + 6$

b) $5n^2 - 11n + 6$

c) $6c^2 - 3c + 1$

d) $6a^2 - 7a + 1$

e) $9b^2 - 24b + 7$

f) $15k^2 - 19k + 6$

4. Factor, if possible.

a) $3y^2 + 4y - 7$

b) $2m^2 + 3m - 9$

c) $8k^2 - 6k - 5$

d) $12y^2 + y - 1$

e) $9x^2 - 15x - 4$

5. Factor.

a) $3x^2 + 7xy + 2y^2$

b) $6m^2 + 13mn + 2n^2$

c) $2p^2 - 11pq + 5q^2$

d) $6c^2 - 7cd - 10d^2$

e) $9x^2 - 9xy - 4y^2$

f) $6d^2 + de - 2e^2$

3.50 Factoring trinomials when a ≠ 1

Solutions to ALL of these can be found in Teams, Unit 1 - Quadratic Functions, Files, 1.30 Extra Questions

5. Factor, if possible.

a) $a^2 - 3a - 10$ **b)** $s^2 + 3s - 10$

c) $d^2 - 8d - 9$ **d)** $f^2 + 7f - 6$

e) $g^2 - 5g - 14$ **f)** $r^2 + 2r - 6$

g) $x^2 + x - 42$ **h)** $b^2 - 2b - 4$

7. Factor completely by first removing the greatest common factor (GCF).

~~**a)** $3x^2 + 12x + 9$~~

~~**b)** $2d^2 - 22d + 56$~~

c) $5z^2 + 40z + 60$

d) $4s^2 - 8s - 32$

e) $bx^2 + 10bx - 24b$

f) $x^3 + 18x^2 + 72x$

3.40 Factoring Trinomials where a = 1

Solutions to ALL of these can be found in Teams, Unit 1 - Quadratic Functions, Files, 1.30 Extra Questions

1. Factor.

~~**a)** $x^2 - 16$~~ **b)** $y^2 - 100$

~~**c)** $9k^2 - 36$~~ **d)** $4a^2 - 121$

~~**e)** $36w^2 - 49$~~ **f)** $144p^2 - 1$

~~**g)** $16n^2 - 25$~~ **h)** $100g^2 - 81$

2. Factor.

~~**a)** $m^2 - 49n^2$~~ ~~**b)** $h^2 - 25d^2$~~

~~**c)** $100 - 9c^2$~~ ~~**d)** $169a^2 - 49b^2$~~

~~**e)** $25x^2 - 36y^2$~~ ~~**f)** $16c^2 - 9d^2$~~

g) $162 - 8s^2$ **h)** $75h^2 - 27g^2$

6. Factor fully, if possible.

a) $4x^2 + 28xy + 49y^2$

~~**b)** $9k^2 - 24km + 16m^2$~~

c) $25p^2 + 60pq + 144q^2$

d) $9y^2 - 7x^2$

~~**e)** $2a^2 - 28ab + 98b^2$~~

~~**f)** $196n^2 - 144m^2$~~

g) $25x^2 + 70xy + 14y^2$

h) $100f^2 - 120fg + 36g^2$

3.60 Factoring PSTs and DoS

Solutions to ALL of these can be found in Teams, Unit 1 - Quadratic Functions, Files, 1.30 Extra Questions