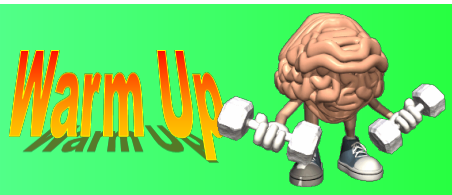



**Factor the following**
**Using the Appropriate method:**

GCF Question

1) $-56a^7 + 48a^6 + 16a^3$

$-8a^3(7a^4 - 6a^3 - 2)$

Simple trinomial

2) $x^2 + x - 56$

signs are diff

Sign on largest factor

| X | + |
|---|---|
| -56 | +1 |

$(x-7)(x+8)$

- $-1, +56$
- $-2, +28$
- $-4, +14$
- $-7, +8$

Hard trinomial

3) $4r^2 + 7r - 2$

sign on larger factor

sign diff

| X | + |
|---|---|
| -8 | +7 |

middle

- $-1, +8$
- $-2, +4$

$4r^2 + 8r - 1r - 2$

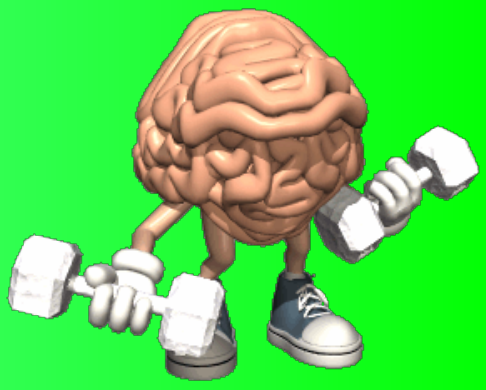
factor out GCF

factor out GCF

$4r(1r+2) - 1(1r+2)$

$(1r+2)(4r-1)$

# Warm Up



**Factor the following**
**Using the Appropriate method:**

**Answers**

1) $-56a^7 + 48a^6 + 16a^3$

2) $x^2 + x - 56$

3) $4r^2 + 7r - 2$

# 3.6 Polynomials of the Form $ax^2 + bx + c$

## Homework

Page 177
Questions: 13

**13.** Factor. Check by expanding.

a) $2y^2 + 5y + 2$

$2y^2 + 4y + 1y + 2$

$(2y^2 + 4y) + (1y + 2)$

$2y(y + 2) + 1(y + 2)$

$(y + 2)(2y + 1)$

b) $2a^2 + 11a + 12$

$2a^2 + 8a + 3a + 12$

$(2a^2 + 8a) + (3a + 12)$

$2a(a + 4) + 3(a + 4)$

$(a + 4)(2a + 3)$

c) $2k^2 + 13k + 15$

$2k^2 + 10k + 3k + 15$

$(2k^2 + 10k) + (3k + 15)$

$2k(k + 5) + 3(k + 5)$

$(k + 5)(2k + 3)$

d) $2m^2 - 11m + 12$

$2m^2 - 8m - 3m + 12$

$(2m^2 - 8m) - (3m + 12)$

$2m(m - 4) - 3(m - 4)$

$(m - 4)(2m - 3)$

13. Factor. Check by expanding.

e) $2k^2 - 11k + 15$

$2k^2 - 6k - 5k + 15$

$(2k^2 - 6k) - (5k + 15)$

$2k(k - 3) - 5(k - 3)$

$(k - 3)(2k - 5)$

f) $2m^2 + 15m + 7$

$2m^2 + 14m + 1m + 7$

$(2m^2 + 14m) + (1m + 7)$

$2m(m + 7) + 1(m + 7)$

$(m - 4)(2m - 3)$

g) $2g^2 + 15g + 18$

$2g^2 + 4g + 9g + 18$

$(2g^2 + 4g) + (9g + 18)$

$2g(g + 2) + 9(g + 2)$

$(g + 2)(2g + 9)$

h) $2n^2 + 9n - 18$

$2n^2 + 12n - 3n - 18$

$(2n^2 + 12n) - (3n - 18)$

$2n(n + 6) - 3(n + 6)$

$(n + 6)(2n - 3)$

# Videos

## Factoring By Asterisk Method

## Factoring By Australian Method

$$6n^2 - 6n - 120$$

$6(n^2 - 1n - 20)$

Simple $\times$ $-20$ $+$ $-1$

$6(x+4)(x-5)$

$1, 20$
$2, 10$
$+4, -5$

$6m^2 + 2m - 8$

1) GCF
2) Simple Trino
3) Hard Trinomial

$2(3m^2 + 1m - 4)$

Hard trinomial
Decomposition

| X | + |
|---|---|
| -12 | +1 |

$-1, +12$
$-2, +6$
$-3, +4$

$2[3m^2 - 3m + 4m - 4]$

$2[3m(m-1) + 4(m-1)]$

$2(m-1)(3m+4)$

# 3.6 Polynomials of the Form $ax^2 + bx + c$

## Homework

Work sheet
Questions :1-10

1) GCF
2) Simple Trinomial
3) Hard Trinomial
↳ Decom

# Extra practice

Math 10B Name_____

## Factoring: Hard Trinomials

Date_____

**Factor each completely.**

1) $6m^2 + 2m - 8$

2) $3x^2 - 16x + 5$

3) $28r^2 - 116r + 16$

4) $2n^2 - 17n - 9$

5) $3r^2 + 2r - 16$

6) $5a^2 - 34a + 45$

7) $8x^2 - 50x + 50$

8) $4n^2 - 15n + 9$

9) $4x^2 + 17x + 4$

10) $4m^2 + 13m + 10$

11) $4b^2 - 3b - 10$

12) $8n^2 - 26n - 24$

13) $u^2 + 16uv + 64v^2$

14) $2x^2 - 22xy + 48y^2$

15) $x^2 - 11xy + 30y^2$

16) $4a^2 - 8ab - 12b^2$

## Answers to Factoring: Hard Trinomials (ID: 1)

1) $2(3m + 4)(m - 1)$
2) $(3x - 1)(x - 5)$
3) $4(7r - 1)(r - 4)$
4) $(2n + 1)(n - 9)$
5) $(3r + 8)(r - 2)$
6) $(5a - 9)(a - 5)$
7) $2(x - 5)(4x - 5)$
8) $(n - 3)(4n - 3)$
9) $(x + 4)(4x + 1)$
10) $(m + 2)(4m + 5)$
11) $(b - 2)(4b + 5)$
12) $2(n - 4)(4n + 3)$
13) $(u + 8v)^2$
14) $2(x - 8y)(x - 3y)$
15) $(x - 5y)(x - 6y)$
16) $4(a - 3b)(a + b)$

2) $3x^2 - 16x + 5$

$(3x - 1)(x - 5)$

4) $2n^2 - 17n - 9$

$(2n + 1)(n - 9)$

6) $5a^2 - 34a + 45$

$(5a - 9)(a - 5)$

8) $4n^2 - 15n + 9$

$(n - 3)(4n - 3)$

10) $4m^2 + 13m + 10$

$(m + 2)(4m + 5)$

12) $8n^2 - 26n - 24$

$2(n - 4)(4n + 3)$

14) $2x^2 - 22xy + 48y^2$

$2(x - 8y)(x - 3y)$

16) $4a^2 - 8ab - 12b^2$

$4(a - 3b)(a + b)$

# 3.6 Polynomials of the Form $ax^2 + bx + c$

## Homework

Test Tuesday, April 11

Worksheet: GCF, Simple Trinomials & Hard Trinomials
Questions: 1-12

Math 10 Name_____

GCF, Simple Trinomials, Hard Trinomials Date_____

**Choose a factoring Method and factor each completely:**

1) $-9n^5 + 6n^3$

2) $36r^6 + 54r - 45$

3) $-40 + 4b^2 - 32b^4$

4) $4xy^2 + 20x^2y + 16xy$

5) $x^2 + 13x + 42$

6) $x^2 + 13x + 36$

7) $k^2 + k - 12$

8) $a^2 + 4a - 45$

9) $2p^2 + 11p - 63$

10) $3n^2 + 11n - 20$

11) $4n^2 - 4n - 15$

12) $6n^2 - 29n + 20$

# Answers:

## Answers to GCF, Simple Trinomials, Hard Trinomials

1) $3n^3(-3n^2+2)$
2) $9(4r^6+6r-5)$
3) $4(-10+b^2-8b^4)$
4) $4xy(y+5x+4)$
5) $(x+6)(x+7)$
6) $(x+9)(x+4)$
7) $(k+4)(k-3)$
8) $(a-5)(a+9)$
9) $(2p-7)(p+9)$
10) $(3n-4)(n+5)$
11) $(2n+3)(2n-5)$
12) $(n-4)(6n-5)$

Factoring Review Name_____

# Math 10 (Numbers, Functions and Relations 10)

**Factor the common factor out of each expression.**

1) $20r^5 + 4r^2 - 40$

2) $-5x^3 - 5x^2 - 5x$

3) $12n^5 - 48n^2 + 42n$

4) $-56a^7 + 48a^6 + 16a^3$

**Factor each completely.**

5) $x^2 + x - 56$

6) $6n^2 - 6n - 120$

7) $4k^2 - 24k - 28$

8) $x^2 - 3x - 18$

9) $b^2 - 7b - 8$

10) $a^2 + 13a + 30$

11) $30n^2 - 24n - 72$

12) $5x^2 - 21x - 54$

13) $16n^2 - 164n + 288$

14) $54x^2 - 90x$

15) $4x^2 + 6x$

16) $6n^2 - 5n + 1$

17) $4r^2 + 7r - 2$

18) $4n^2 - 4n - 35$

19) $6v^2 - 14v$

## Answers to Math 10 (Numbers, Functions and Relations 10)

1) $4(5r^5 + r^2 - 10)$
2) $-5x(x^2 + x + 1)$
3) $6n(2n^4 - 8n + 7)$
4) $8a^3(-7a^4 + 6a^3 + 2)$
5) $(x + 8)(x - 7)$
6) $6(n - 5)(n + 4)$
7) $4(k + 1)(k - 7)$
8) $(x - 6)(x + 3)$
9) $(b - 8)(b + 1)$
10) $(a + 3)(a + 10)$
11) $6(5n + 6)(n - 2)$
12) $(5x + 9)(x - 6)$
13) $4(n - 8)(4n - 9)$
14) $18x(3x - 5)$
15) $2x(2x + 3)$
16) $(3n - 1)(2n - 1)$
17) $(r + 2)(4r - 1)$
18) $(2n + 5)(2n - 7)$
19) $2v(3v - 7)$