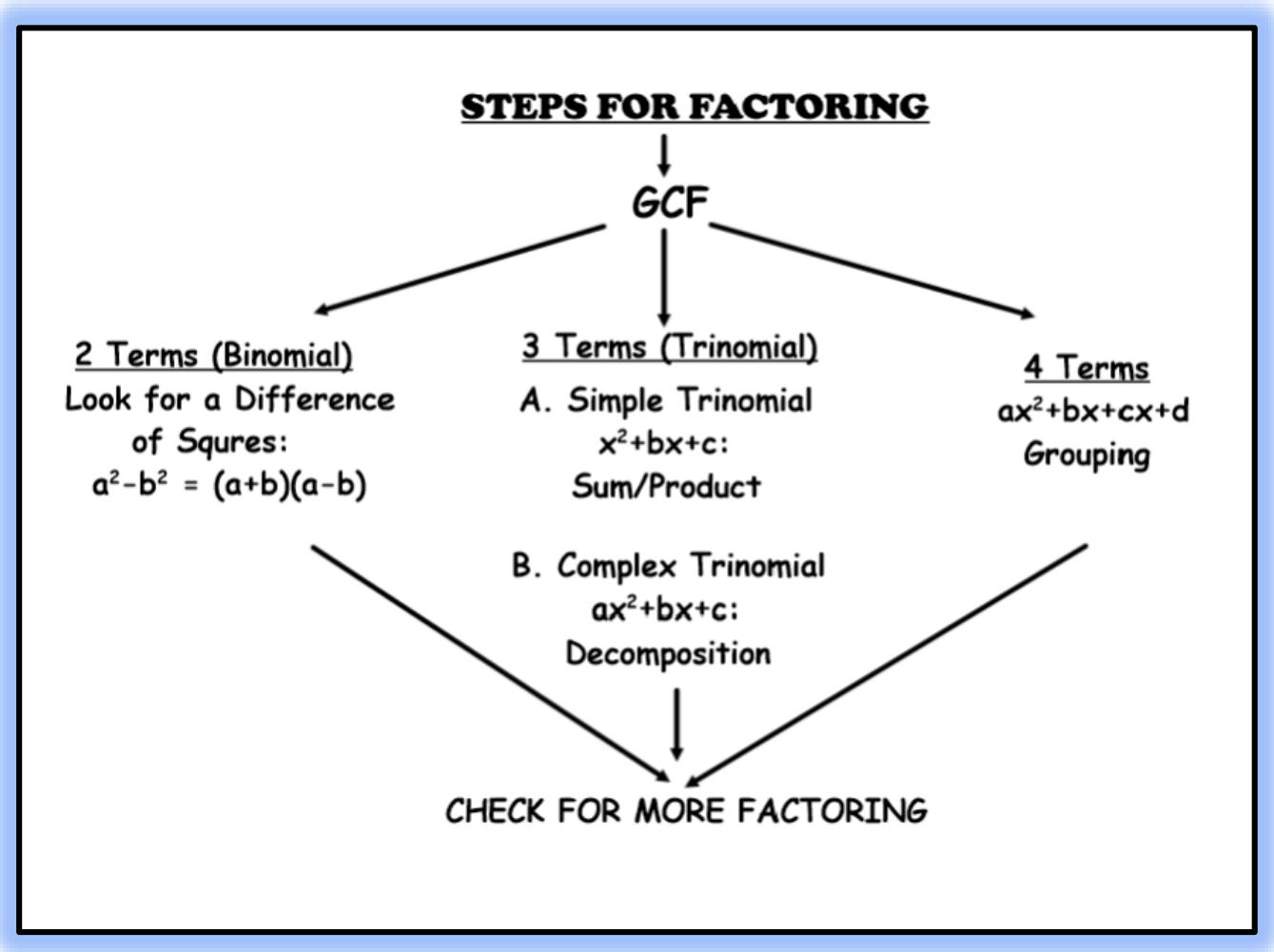
FACTORING BOOKLET: How do I know which strategy to use?
This chart will help you to decide.....



Now use the chart above to help you factor the questions that follow.

Assignment

1. Factor.

a) $x^2 - 49$ **b)** $x^2 - 8x + 15$ **c)** $8x^2 + 32$

d) $a^3 + a^2 + a + 1$ **e)** $2p^2 - 5p - 7$ **f)** $v^2 + 7v + 10$

g) $a^3 - a^2 - a + 1$ **h)** $4 - 25t^2$ **i)** $x^4 - 16$

2. Factor.

a) $7x^2 - 19x - 6$ **b)** $3 + x - 2x^2$ **c)** $a^2 - 64b^2$

d) $108 - 3z^2$ **e)** $x^4 + 5x^2 + 4$ **f)** $8v^2 - 32v - 96$

* g) $625p^4 - 1$ h) $2y^4 - y^2 - 3$ i) $36 - 3x - 3x^2$

3. Factor.

a) $b^2 - 16 - 6b + 24$ b) $t^6 - t^3 - 6$ c) $36a^2 + 60a + 25$

d) $5 + 17g + 6g^2$ e) $x^5 - 81x$ f) $-256 + t^4$

g) $x^2 + y - x - xy$ h) $2x^4 - 15x^2 - 27$ i) $12a^2 + 32a - 12$

4. The expression $6x^2 - 13x - 28$ can factored into the form $(ax + b)(cx - d)$, where a, b, c and d are positive numbers. The value of $a + b + c + d$ is _____.

5. When factored, the trinomials $x^2 - 10x + 21$ and $x^2 - 4x - 21$ have one binomial factor in common. This factor is

A. $x - 7$
B. $x + 7$
C. $x - 3$
D. $x + 3$

6. One factor of $12x^2 + 10x - 8$ is

A. $3x + 4$
B. $3x - 4$
C. $2x + 1$
D. $6x - 1$

7. The area of a rectangle is $2x^2 + 17x + 30$ cm².

a. Determine the dimensions of the rectangle.

b. Using your answer from above, determine a simplified expression of the perimeter of the rectangle.

c. If $x = 5\ cm$, find the actual perimeter.

Answer Key

1. **a)** $(x - 7)(x + 7)$ **b)** $(x - 5)(x - 3)$ **c)** $8(x^2 + 4)$
d) $(a + 1)(a^2 + 1)$ **e)** $(p + 1)(2p - 7)$ **f)** $(v + 5)(v + 2)$
g) $(a + 1)(a - 1)^2$ **h)** $(2 - 5t)(2 + 5t)$ **i)** $(x - 2)(x + 2)(x^2 + 4)$

2. **a)** $(7x + 2)(x - 3)$ **b)** $(3 - 2x)(1 + x)$ **c)** $(a - 8b)(a + 8b)$
d) $3(6 - z)(6 + z)$ **e)** $(x^2 + 4)(x^2 + 1)$ **f)** $8(v + 2)(v - 6)$
g) $(5p - 1)(5p + 1)(25p^2 + 1)$ **h)** $(y^2 + 1)(2y^2 - 3)$ **i)** $3(4 + x)(3 - x)$

3. **a)** $(b - 2)(b - 4)$ **b)** $(t^3 - 3)(t^3 + 2)$
c) $(6a + 5)^2$ **d)** $(5 + 2g)(1 + 3g)$
e) $x(x - 3)(x + 3)(x^2 + 9)$ **f)** $-(4 - t)(4 + t)(16 + t^2)$ or $(t - 4)(t + 4)(t^2 + 16)$
g) $(x - 1)(x - y)$ **h)** $(x - 3)(x + 3)(2x^2 + 3)$ **i)** $4(3a - 1)(a + 3)$

4.

1	6		

5. ***A*** ***6***. ***A***

7a. (x + 6)(2x + 5)
b. P = (x + 6) + (x + 6) + (2x + 5) + (2x +5) = 6x + 22 cm
c. P = 6(5) + 22 = 52 cm