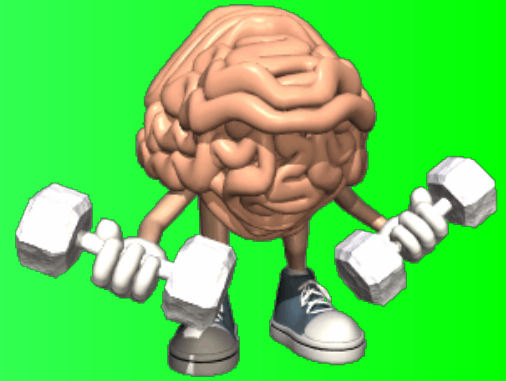


Warm Up



Factor the following:

1) $n^2 + 7n - 30$ *Simple trinomial (Pass in for marks)*
What multiply? -30 -3, 10
add +7
 $(n-3)(n+10)$
check by multiply

2) $-80k^4 + 10k^2$
 $-10k^2(8k^2 - 1)$ OR $10k^2(-8k^2 + 1)$
 $-80k^4 + 10k^2$

3) $b^2 + 11b + 30$
 $(b+5)(b+6)$ $\frac{x}{+30}$ $\frac{+}{11}$
 5×6

4) $-5x^2 + 40x - 35$

Factor Each of the following:
(Finish For homework)

| | | | |
|----------------------|---------------|----------------------|---------------|
| 1. $x^2 - 14x + 45$ | $(x-9)(x-5)$ | 2. $x^2 + 17x + 60$ | $(x+5)(x+12)$ |
| 3. $x^2 - 18x + 80$ | $(x-8)(x-10)$ | 4. $x^2 - 10x + 16$ | $(x-8)(x-2)$ |
| 5. $x^2 - 6x + 9$ | $(x-3)(x-3)$ | 6. $x^2 - 7x + 6$ | $(x-6)(x-1)$ |
| 7. $x^2 + 20x + 99$ | $(x+11)(x+9)$ | 8. $x^2 + 3x - 18$ | $(x-3)(x+6)$ |
| 9. $x^2 - 3x - 88$ | $(x+8)(x-11)$ | 10. $x^2 - 16x + 48$ | $(x-12)(x-4)$ |
| 11. $x^2 + 11x + 30$ | $(x+6)(x+5)$ | 12. $x^2 - 14x + 33$ | $(x-11)(x-3)$ |
| 13. $x^2 + x - 30$ | $(x+6)(x-5)$ | 14. $x^2 - 3x - 70$ | $(x-10)(x+7)$ |
| 15. $x^2 + 8x - 9$ | $(x+9)(x-1)$ | 16. $x^2 - 16x + 55$ | $(x-5)(x-11)$ |
| 17. $x^2 + 6x - 72$ | $(x-6)(x+12)$ | 18. $x^2 + 5x - 50$ | $(x+10)(x-5)$ |
| 19. $x^2 + 10x + 24$ | $(x+6)(x+4)$ | 20. $x^2 + 6x - 16$ | $(x+8)(x-2)$ |

$$x^2 + x - 30$$

sign on target
signs different

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

multiplies

$$\begin{array}{r} -30 \\ \wedge \\ -1 \quad +30 \\ -2 \quad +15 \\ -3 \quad +10 \\ -5 \quad +6 \end{array}$$

-5, 6

Add

$$\frac{\quad}{+1}$$

$$x^2 - 10x + 16$$

Sign on x is $-$ signs are same
 Sign on 16 is $+$ signs are same

$$(x-2)(x-8)$$

Check do multiplication

$$(x-2)(x-8)$$


$$x^2 - 0x - 2x + 16$$

$$x^2 - 10x + 16$$

multiply

$$+16$$

$$-1, 16$$

$$-2, 8 \checkmark$$

$$-4, 4$$

adds

$$-10$$

When working with Factoring trinomials

-Always check for GCF first

$$n^3 - 4n^2 - 21n$$

$$n (n^2 - 4n - 21)$$

Simple trinomial
So factor this

$$= n (n+3)(n-7)$$

$$\begin{array}{r} \text{mult} \\ -21 \\ \hline +3, -7 \end{array} \quad \begin{array}{r} \text{add} \\ -4 \\ \hline \end{array}$$

$$2n^2 - 14n + 24$$

Always check for GCF

$$= 2 (n^2 - 7n + 12)$$

Signs are same

Simple trinomial

mult
+12

add
-7

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

$$3r^3 + 24r^2 + 45r$$

$$3r \left(r^2 + 8r + 15 \right)$$

Simple trinomial

$$\begin{array}{r} \text{mult} \\ +15 \\ \hline +3, +5 \end{array}$$

$$\begin{array}{r} \text{add} \\ +8 \end{array}$$

$$= 3r (r+3)(r+5)$$

1) $x^2 + 12x - 28$

Factors list (pointing to x^2)

diff +, - (pointing to -28)

$(x-2)(x+14)$

mult

-28

$-1, +28$

$-2, +14$ ✓

$-4, +7$

add

$+12$

2) $7c^2 - 35c + 42$

$= 7(c^2 - 5c + 6)$

Simple trinomial (under $c^2 - 5c + 6$)

$= 7(c-3)(c-2)$

mult

$+6$

$-3, 2$

add

-5

Homework

Short Quiz Tomorrow

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Questions: 10, 13, 15ab, 21ce,

~~19~~ and ~~20~~

10 a) $(w+3)(w+2)$

$$w^2 + 2w + 3w + 6$$

$$w^2 + \boxed{5w} + 6$$

b) $(x+5)(x+\square)$

$$x^2 + \boxed{4}x + 5x + \boxed{5} \times \boxed{2}$$

$$x^2 + \boxed{9}x + 10$$

13) $(r-13)(r+4)$

$$\begin{array}{r} r^2 + 4r - 13r - 52 \\ \quad \quad \quad \underbrace{} \\ r^2 - 9r - 52 \end{array}$$