


SPORTY HOST

The game of baseball was first played in the United States in 1829. Up until 1935, the games were always played in the daytime. Which city hosted the first nighttime baseball game?

Simplify each problem by using either the distributive property or the FOIL pattern. On the "scoreboard," mark a "run" for Cincinnati for every solution that ends in a negative number; mark a run for Dallas for every solution that ends in a positive number. The city with the most runs is the one that hosted the event.

 **Tip:** Use the left and right distributive properties when multiplying two polynomials. In other words, $(ax + b)(x^2 + x + c) = ax(x^2 + x + c) + b(x^2 + x + c)$ where a , b , and c are real numbers. Use the FOIL pattern when multiplying two binomials: $(x + b)(x + c) = x^2 + bx + cx + bc$, where b and c are real numbers.

1. $(x + 2)(x - 5)$
2. $(x - 4)(x^2 + 2x + 6)$
3. $(x + 3)(2x + 6)$
4. $(x + 2)(x^2 + 7x - 10)$
5. $(x^2 - 8)(x^2 + 3x - 1)$
6. $(3x^2 + 2)(x - 3)$
7. $(5x - 7)(3x - 4)$
8. $(x^2 + 4x - 2)(x + 4)$
9. $(-2x + 5)(x - 1)$

SCOREBOARD	
Cincinnati	Dallas

Answer: _____

ANIMAL TRACKS

Which animal can run faster than any other land animal, sprinting at speeds faster than 60 miles an hour?

Simplify each expression by multiplying the binomials. Shade in the grid boxes that contain your solutions. Read across the unshaded boxes to identify the answer to the puzzler.



Tip: Use the two special patterns for multiplying binomials. They are the **sum and difference** pattern, where $(a + b)(a - b) = a^2 - b^2$, and the **square of the binomial** pattern, where $(a + b)^2 = a^2 + 2ab + b^2$ and $(a - b)^2 = a^2 - 2ab + b^2$.

For example, $(2x - 3)^2 \rightarrow (2x)^2 - 2(2x)(3) + 3^2 \rightarrow 4x^2 - 12x + 9$.

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|-----------------------|------------------------|
| 1. $(x + 4)(x - 4)$ | 8. $(x + 10)(x - 10)$ |
| 2. $(2x - 5)(2x + 5)$ | 9. $(4x + 5)^2$ |
| 3. $(5x + 1)^2$ | 10. $(7x - 5)(7x + 5)$ |
| 4. $(3x - 2)^2$ | 11. $(6x - 4)^2$ |
| 5. $(2x - 6)(2x + 6)$ | 12. $(3x + 9)^2$ |
| 6. $(8x - 4)^2$ | 13. $(9x + 4)(9x - 4)$ |
| 7. $(x + 6)(x - 6)$ | |

(C) $x^2 - 8x + 4$	(K) $x^2 - 36$	(A) $25x^2 + 10x + 1$	(H) $x^2 - 25$
(V) $16x^2 + 40x + 25$	(M) $9x^2 - 12x + 4$	(E) $x^2 + 6x + 9$	(D) $x^2 - 16$
(E) $x^2 - 121$	(N) $9x^2 + 54x + 81$	(L) $49x^2 - 25$	(B) $64x^2 - 64x + 16$
(U) $4x^2 - 25$	(C) $81x^2 - 16$	(T) $x^2 - 12x + 36$	(R) $x^2 - 100$
(Q) $36x^2 - 48x + 16$	(A) $100x^2 - 121$	(K) $4x^2 - 36$	(H) $x^2 - 14x + 49$

Answer: _____