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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **1.** Factor out the greatest common factor from the expression  -3xyz2 + 6xz2 – 15xyz2          -3xz2(y + 2 + 5y)         3xz(-yz + 2z – 5yz)         3xz2(-y + 2 – 5y)         -3xz(yz + 2z + 5yz) | | |  | | | | **2.** Factor out the greatest common factor from the expression  9x4y4 + 7x6y3 – 12x4y3  **3.** Megan factored the expression 12x2+13x -14 as (3x +2)(4x -7). But when Jacob applied the FOIL principle and multiplied out (3x +2)(4x -7), he got  12x2 – 13x -14; thus, Megan’s solution does not appear to check. Why is that? Please help Megan to understand this better. Explain your reasoning and correctly factor the original expression, if possible. If the expression is prime, so state.  **4.** Use the “difference of squares” rule to factor the following expression:  16x4 -121y4 | | | |
| **5.** Factor the following expression into a product of two binomials: 64x2 – 64x +16         (8x – 4)(8x + 4)         (8x – 16)(8x – 1)         (8x – 4)(8x – 4)         x(64x – 16) |

**6.** Factor the following expression into a product of binomials:  
16a2 – 40ab + 25b2

**7.** Factor the following expression into a product of binomials:  
16y2 – 25z2

**8.** The length of a rectangle is 5 meters more than its width. If the area is 66 square meters, what are the length and width?

**9.** A 200-ft diagonal brace on a bridge connects a support of the center of the bridge to a side support on the bridge. The horizontal distance that it spans is 40 ft longer that the height that it reaches on the side of the bridge. Find the horizontal and vertical distances spanned by this brace.

**10.** Completely factor the expression  
216x2 – 384y2

**11.** Completely factor the expression  
245x3 – 840x2y + 180xy2