

NAME: _____

P.I. A2.A.7: Factor polynomial expressions completely, using any combination of the following techniques: common factor extraction, difference of two perfect squares, quadratic trinomials

Factor:

1. $10x^2 + 10 + 29x$

[A] $(5x+2)(2x-5)$ [B] $(5x+2)(2x+5)$

[C] $(5x-2)(2x+5)$ [D] $(5x-2)(2x-5)$

2. $4x^2 + 12x + 9$

[A] $(2x-3)^2$ [B] $(2x+3)(2x-3)$

[C] $(2x-9)(2x+1)$ [D] $(2x+3)^2$

3. $6x^2 + 10 + 19x$

[A] $(2x-5)(3x-2)$ [B] $(2x+5)(3x-2)$

[C] $(2x+5)(3x+2)$ [D] $(2x-5)(3x+2)$

4. $15x^2 + 20 + 37x$

[A] $(5x+4)(3x-5)$ [B] $(5x-4)(3x+5)$

[C] $(5x+4)(3x+5)$ [D] $(5x-4)(3x-5)$

5. $4e^2 - 20e + 25$

[A] $(2e-25)(2e+1)$ [B] $(2e+5)^2$

[C] $(2e-5)^2$ [D] $(2e-5)(2e+5)$

6. $12x^2 + 2 + 11x$

[A] $(3x-2)(4x-1)$ [B] $(3x-2)(4x+1)$

[C] $(3x+2)(4x-1)$ [D] $(3x+2)(4x+1)$

7. $25z^2 - 30z + 9$

[A] $(5z-3)(5z+3)$ [B] $(5z-9)(5z+1)$

[C] $(5z+3)^2$ [D] $(5z-3)^2$

8. $12x^2 + 5 - 19x$

[A] $(4x+5)(3x-1)$ [B] $(4x-5)(3x-1)$

[C] $(4x-5)(3x+1)$ [D] $(4x+5)(3x+1)$

9. $16x^2 + 3 - 16x$

[A] $(4x+3)(4x+1)$ [B] $(4x-3)(4x+1)$

[C] $(4x-3)(4x-1)$ [D] $(4x+3)(4x-1)$

10. $16d^2 + 40d + 25$

[A] $(4d-25)(4d+1)$ [B] $(4d-5)^2$

[C] $(4d+5)^2$ [D] $(4d+5)(4d-5)$

11. Find a polynomial that has $x+3$ as one factor and another factor in the form $ax^2 + bx + c$. Divide to prove that your product is correct.

[1] B

[2] D

[3] C

[4] C

[5] C

[6] D

[7] D

[8] B

[9] C

[10] C

Answers may vary. Sample:

$$(x+3)(x^2-2x-8) = x^3 + x^2 - 14x - 24;$$

Divide $x^3 + x^2 - 14x - 24$ by $x + 3$ and get

[11] $x^2 - 2x - 8.$