Multiply each to get an equivalent expression

1) $2x(3x-1)$

2) $(x+1)(x-5)$

3) $(2x-3)(x+2)$

4) $(x-11)(x+11)$

5) $(x-6)^2$

Factor each to get an equivalent expression

6) $3x^2 - 27x$

7) $x^2 - x - 56$

8) $2x^2 + 13x - 7$

9) $x^2 - 81$

10) $x^2 + 24x + 144$

Factor completely to get an equivalent expression

11) $3x^2 - 75$

12) $5x^2 + 30x + 45$

13) $x^3 - 49x$

14) $2x^2 - 24x + 72$

Choose from the bottom.

$5(x - 4)^2$

$2(x - 12)^2$

$3(x + 5)(x - 5)$

$x(x + 8)(x - 8)$

$5(x + 3)^2$

$2(x - 6)^2$

$3(x + 2)(x - 2)$

$x(x + 7)(x - 7)$

15) Create your own difference of two squares, show how it factors, and show the FOIL.

16) Create your own perfect square trinomial, show how it factors, and show the FOIL.

17) Create your own binomial, square it and create a perfect square trinomial, show how it factors, and show the FOIL.

18) Which of the following are unfactorable and considered “prime”?

$x^2 - 2x$

$2x - 25$

$x^2 + 25$

$x^2 - 25$

$x^2 - 4x + 5$

$3x^2 - 7x - 6$

$x^2 - 10x + 25$

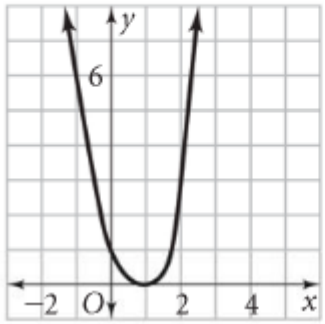
19) Factor each completely into an equivalent expression.

$x^3 + 11x^2 + 10x$

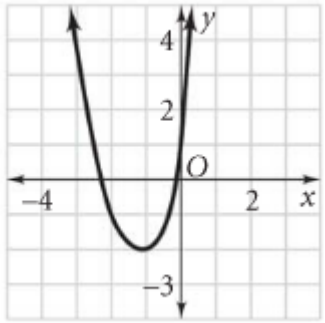
$2x^3 - 50x$

20) Which of the following graphs best represents the equation $y = 2(x - 1)^2 + x - 1$?

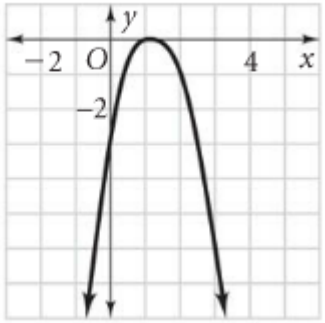
A



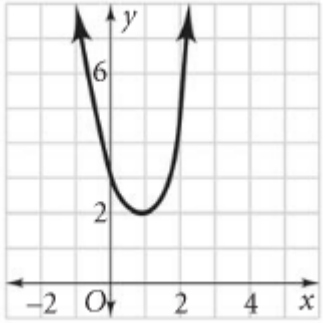
C



B



D



21) Which expression is equivalent to $(3x - 4y)^2$?

(A) $6x^2 - 12xy - 8y^2$

(B) $9x^2 - 14xy + 16y^2$

(C) $9x^2 - 24xy + 16y^2$

(D) $9x^2 - 24xy - 16y^2$

22) **Error Analysis** Suppose a classmate factored the binomial at the right. What error did your classmate make?

$$4x^2 - 121 = (4x - 11)(4x - 11)$$
$$= (4x - 11)^2$$

23) Factor $24x^2 + 82x + 70$.

(A) $2(2x + 5)(6x + 7)$

(B) $3(8x^2 + 27x + 23)$

(C) $2(3x + 5)(4x + 7)$

(D) It cannot be factored using only rational numbers.

24) Which statement about $4x^2 - 5x + 3$ is true?

(A) This trinomial has numerical coefficients 4, −5, and 3.

(B) This binomial has numerical coefficients 4, −5, and 3.

(C) This polynomial is written in ascending order.

(D) The degree of this polynomial is 0.