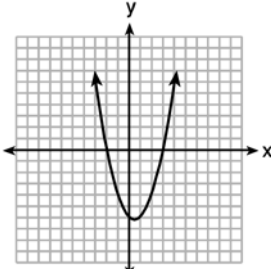
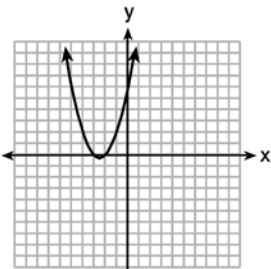


A.APR.B.3: Zeros of Polynomials 1b

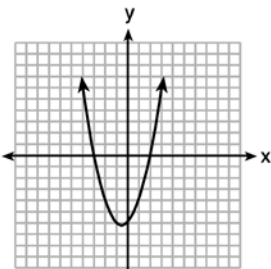
- 1 The graphs below represent functions defined by polynomials. For which function are the zeros of the polynomials 2 and -3?



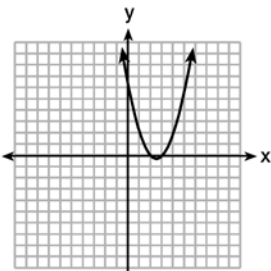
1)



2)

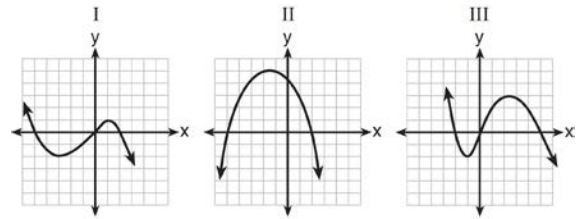


3)

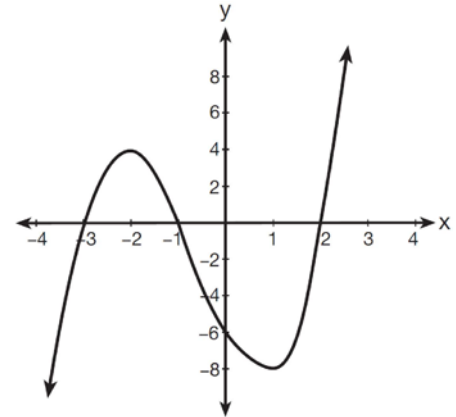


4)

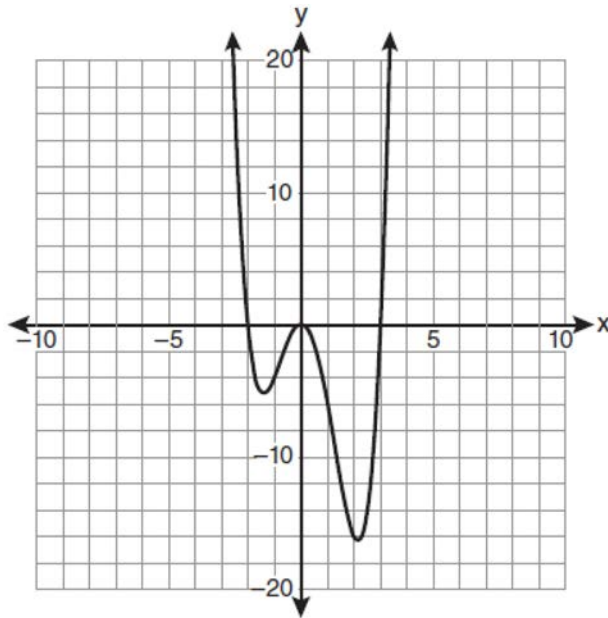
- 2 A polynomial function contains the factors x , $x - 2$, and $x + 5$. Which graph(s) below could represent the graph of this function?



- 3 What are the zeros of the polynomial function graphed below?

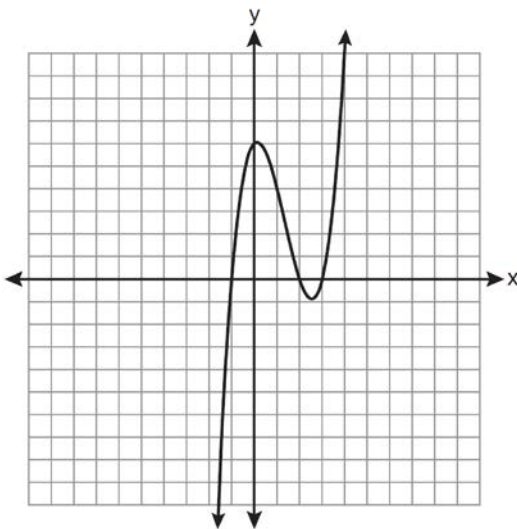


4 The graph of $y = f(x)$ is shown below.



Which set lists all the real solutions of $f(x) = 0$?

5 The graph of $y = x^3 - 4x^2 + x + 6$ is shown below.



What is the product of the roots of the equation $x^3 - 4x^2 + x + 6 = 0$?

6 The zeros of the function $f(x) = x^2 - 5x - 6$ are

7 What are the zeros of the function $f(x) = x^2 - 13x - 30$?

8 The zeros of the function $f(x) = 2x^3 + 12x - 10x^2$ are

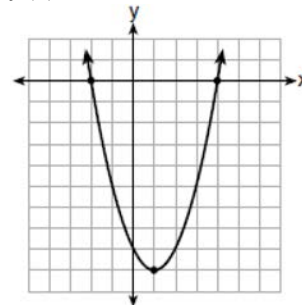
9 The zeros of the function $f(x) = (x + 2)^2 - 25$ are

10 For which function defined by a polynomial are the zeros of the polynomial -4 and -6 ?

11 Which polynomial function has zeros at -3 , 0 , and 4 ?

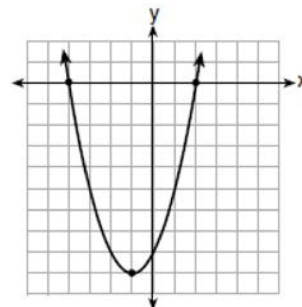
12 Which function has zeros of -4 and 2 ?

1) $f(x) = x^2 + 7x - 8$



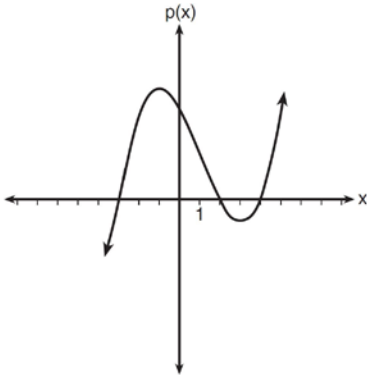
2)

3) $g(x) = x^2 - 7x - 8$

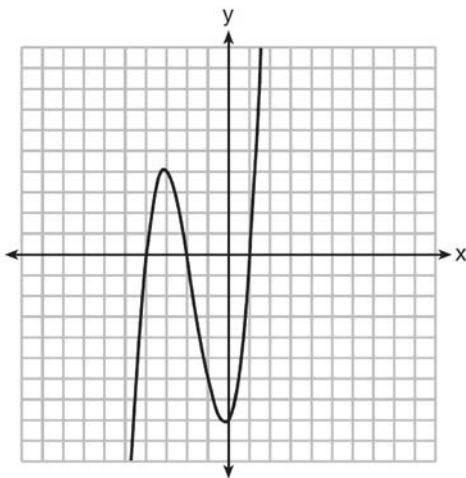


4)

- 13 Based on the graph below, which expression is a possible factorization of $p(x)$?

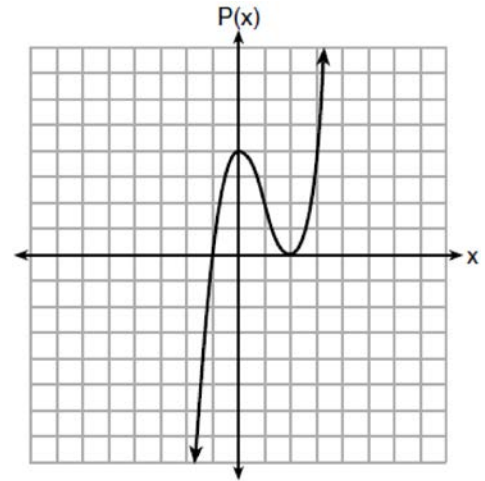


- 14 The graph of $f(x)$ is shown below.



Which function could represent the graph of $f(x)$?

- 15 Wenona sketched the polynomial $P(x)$ as shown on the axes below.



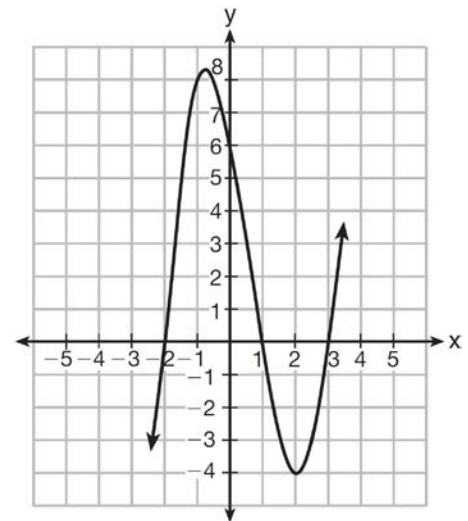
Which equation could represent $P(x)$?

- 16 Which equation(s) represent the graph below?

I $y = (x + 2)(x^2 - 4x - 12)$

II $y = (x - 3)(x^2 + x - 2)$

III $y = (x - 1)(x^2 - 5x - 6)$



A.APR.B.3: Zeros of Polynomials 1b

Answer Section

1 ANS: 3 REF: spr1302ai

2 ANS:
I, only

REF: 011524ai

3 ANS:
{-3,-1,2}

REF: 081501a2

4 ANS:
{-2,0,3}

REF: 061005a2

5 ANS:
-6
The roots are -1,2,3.

REF: 081023a2

6 ANS:
-1 and 6
 $f(x) = x^2 - 5x - 6 = (x + 1)(x - 6) = 0$
 $x = -1, 6$

REF: 061612ai

7 ANS:
15 and -2
 $x^2 - 13x - 30 = 0$
 $(x - 15)(x + 2) = 0$
 $x = 15, -2$

REF: 061510ai

8 ANS:
{0,2,3}
 $2x^3 + 12x - 10x^2 = 0$
 $2x(x^2 - 5x + 6) = 0$
 $2x(x - 3)(x - 2) = 0$
 $x = 0, 2, 3$

REF: 081719ai

- 9 ANS:
-7 and 3

$$(x+2)^2 - 25 = 0$$

$$((x+2)+5)((x+2)-5) = 0$$

$$x = -7, 3$$

REF: 081418ai

- 10 ANS:

$$y = x^2 + 10x + 24$$

$$(x+4)(x+6) = 0$$

$$x^2 + 10x + 24 = 0$$

REF: spr1303ai

- 11 ANS:

$$f(x) = x(x+3)(x-4)$$

REF: 061710ai

- 12 ANS: 4

REF: 011706ai

- 13 ANS:

$$(x+3)(x-2)(x-4)$$

REF: 081623ai

- 14 ANS:

$$f(x) = (x+2)(x^2 + 3x - 4)$$

$$f(x) = (x+2)(x+4)(x-1)$$

REF: 081504ai

- 15 ANS:

$$P(x) = (x+1)(x-2)^2$$

REF: 081707ai

- 16 ANS:

II, only

$$y = (x-3)(x+2)(x-1)$$

REF: 061512ai