BRITISH COLUMBIA PRE-CALCULUS 12 (MPREC12) · UNIT A · 25 QUESTIONS

Transformations and Polynomial Functions — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The vertex of the parabola $y = (x - 4)^2 + 3$ is**



A (4, 3)

B (-4, 3)

C (4, -3)

D (-4, -3)

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2 **If (2, 5) lies on y = f(x), then on y = -f(x) the point is**

- A (2, -5)
- B (-2, 5)
- C (2, 5)
- D (-2, -5)

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3 **If (4, 6) lies on y = f(x), then on y = f(2x) the point is**

- A (8, 6)
- B (2, 6)
- C (4, 12)
- D (2, 3)

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4 **If (1, 4) lies on y = f(x), then on y = 3f(x) the point is**

- A (3, 12)
- B (3, 4)
- C (1, 7)
- D (1, 12)

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5 **If (5, 2) lies on y = f(x), then on y = 2f(x - 3) + 1 it is**

- A (5, 5)
- B (2, 5)
- C (8, 3)
- D (8, 5)

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6 **Shifting $y = x^2$ left 2 and up 5 gives**



A $y = (x + 2)^2 - 5$

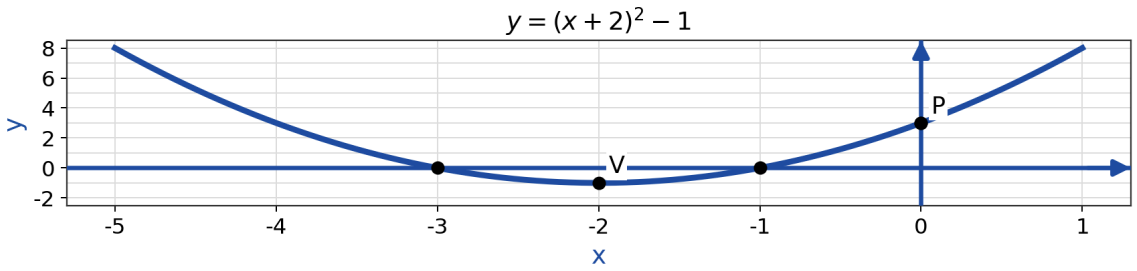
B $y = (x - 2)^2 + 5$

C $y = (x + 2)^2 + 5$

D $y = (x - 2)^2 - 5$

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7 **The graph shows $y = (x + 2)^2 - 1$, with vertex V and point P. The y-intercept of this graph is**



- **A** 3
- **B** -1
- **C** 0
- **D** 4

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8 **The degree of $-3x^4 + 2x^2 - 7$ is**

- **A** 3
- **B** 4
- **C** 2
- **D** 7

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9 For $f(x) = -2x^5 + x^2 - 4$, as $x \to -\infty$, $f(x) \to$



A 0

B $-\infty$

C $+\infty$

D 4

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10 **The zeros of f(x) = (x - 1)(x + 2)(x - 3) are**

A -1, -2, -3

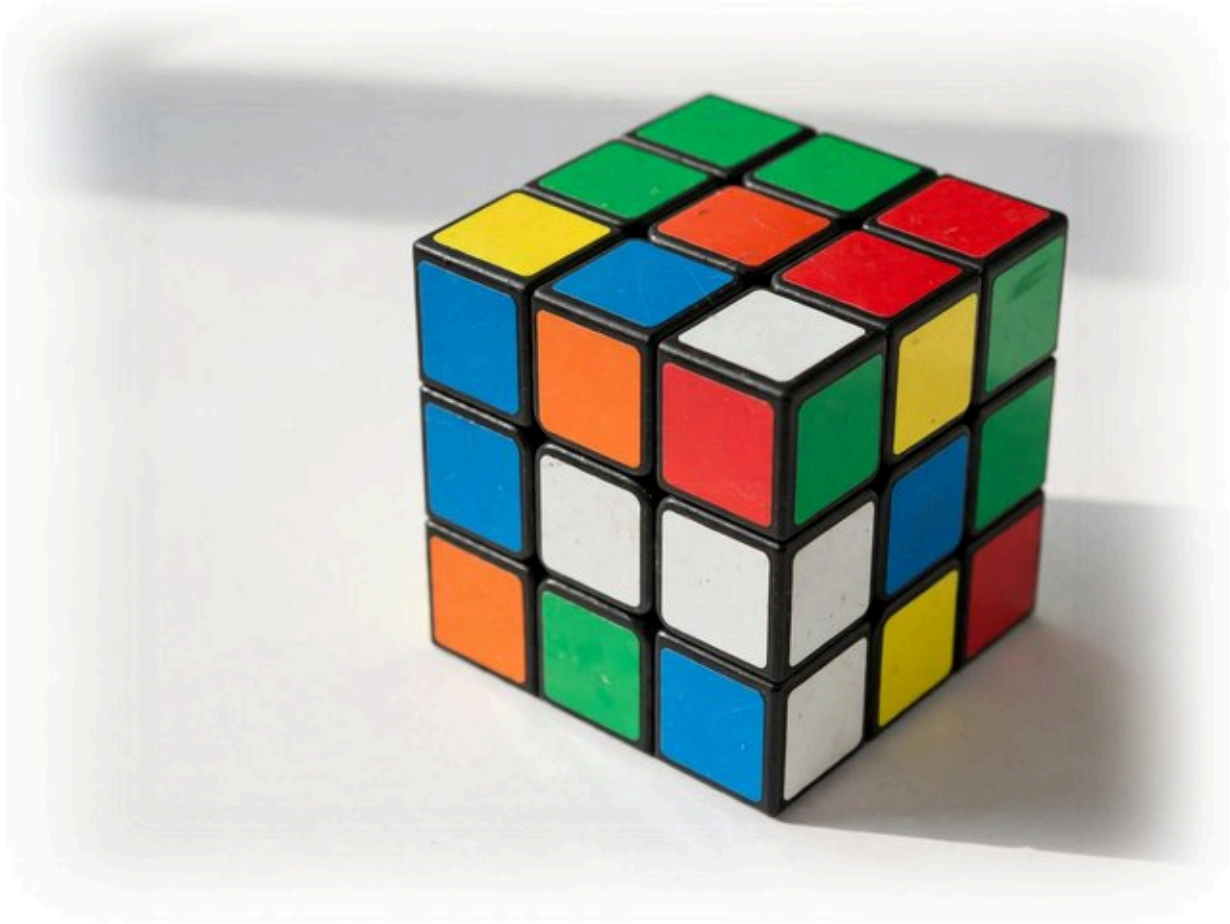
B -1, 2, -3

C 1, 2, 3

D 1, -2, 3

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11 **When factored completely, $x^3 - 8$ is**



A $(x - 2)(x^2 - 2x + 4)$

B $(x - 2)(x^2 + 2x + 4)$

C $(x + 2)(x^2 + 2x + 4)$

D $(x - 2)^3$

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12 **The solutions of $x^2 - 5x + 6 = 0$ are**

- A 2 and -3
- B -2 and -3
- C 1 and 6
- D 2 and 3

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13 **The solutions of $x^3 - 4x = 0$ are**

- A 2, -2
- B 0, 4, -4
- C 0, 2, -2
- D 0, 2

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14 **For $P(x) = x^3 - 2x^2 + 3x - 5$, the value of $P(2)$ is**

ANSWER _____

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15 **When factored completely, $x^2 - 3x + 2$ is**

A $(x + 1)(x + 2)$

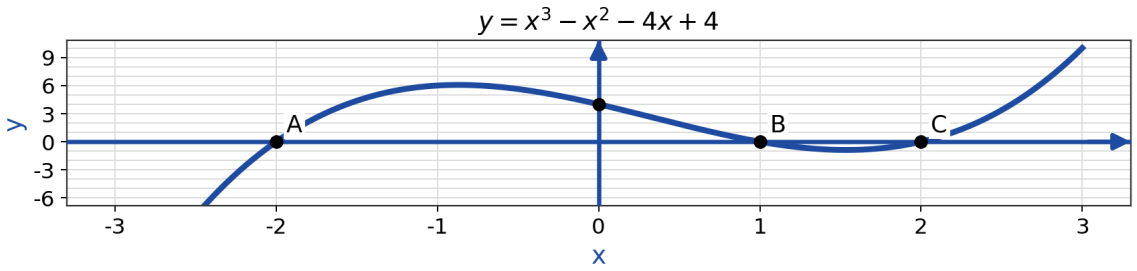
B $(x - 1)(x - 2)$

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

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

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16 **The graph shows a cubic with x-intercepts at -2, 1, and 2. How many distinct x-intercepts does it have?**



- **A** 2
- **B** 3
- **C** 1
- **D** 4

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17 **For f(x) = (x - 2)²(x + 1), at x = 2 the graph**

- **A** touches and turns back
- **B** crosses straight through
- **C** has a vertical asymptote
- **D** has a hole

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18 For $f(x) = 4x^3 - x + 1$, as $x \to +\infty$, $f(x) \to$

A 1

B $-\infty$

C $+\infty$

D 0

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19 Dividing $x^2 + 5x + 6$ by $x + 2$ gives

A $x + 3$

B $x + 2$

C $x + 5$

D $x - 3$

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20 **The y-intercept of $f(x) = 2x^3 - x^2 + 4x - 7$ is**

ANSWER

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21 **The point (3, -1) under**
(x, y) → (x - 4, y + 2) becomes



A (7, 1)

B (-1, 1)

C (-1, -3)

D (7, -3)

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22 If (6, 10) lies on y = f(x), then on $y = \frac{1}{2}f(x)$ the point is

- A (12, 10)
- B (3, 10)
- C (6, 5)
- D (6, 20)

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23 The vertex of y = |x - 1| + 2 is

- A (1, 2)
- B (-1, 2)
- C (1, -2)
- D (-1, -2)

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24 **Reflecting $y = x^2$ in the x-axis gives**



A $y = -x + 2$

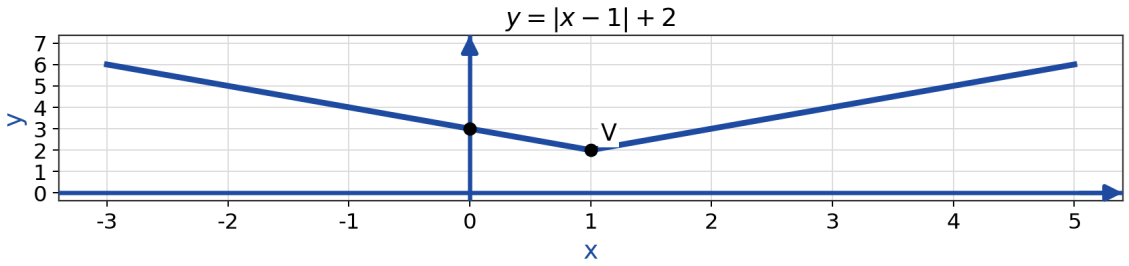
B $y = (-x)^2$

C $y = x^2 - 1$

D $y = -x^2$

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25 **The graph shows y = |x - 1| + 2, with vertex V. The smallest value of this function is**



A 0

B 1

C 2

D -1

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ANSWER KEY

1.	A	**10.**	D	**19.**	A
2.	A	**11.**	B	**20.**	-7
3.	B	**12.**	D	**21.**	B
4.	D	**13.**	C	**22.**	C
5.	D	**14.**	1	**23.**	A
6.	C	**15.**	B	**24.**	D
7.	A	**16.**	B	**25.**	C
8.	B	**17.**	A		
9.	C	**18.**	C		

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