

NAME:

DATE:

Key 2425

**A2.Q2.BERMELLEEMBO: NEXT LEVEL FACTORING**

**DAY N3**

**(REVIEW OF UNIT N AND ADDITIONAL REVIEW)**

**REVIEW MASTERY PRACTICE**

1. (TOPIC N1) FACTOR EACH POLYNOMIAL COMPLETELY

PUT A BOX AROUND YOUR ANSWER

A.  $3x^2 + 11x - 4$

$$(3x-1)(x+4)$$

$$(3x-1)(x+4)$$

$$\begin{array}{r} -1x \\ +12x \\ \hline 11x \end{array} \text{ yes}$$

$$(3x+4)(x-1)$$

$$\begin{array}{r} 4x \\ -3x \\ \hline 1x \end{array} \text{ NO}$$

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

$$\begin{array}{r} +2x \\ -6x \\ \hline -4x \end{array} \text{ NO}$$

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

$$\begin{array}{r} -2x \\ +6x \\ \hline -4x \end{array} \text{ NO}$$

B.  $2x^2 - 5x - 12$

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

$$(2x+2)(x-6)$$

$$\begin{array}{r} 2x \\ -12x \\ \hline -10x \end{array} \text{ NO}$$

$$(2x-6)(x+2)$$

$$\begin{array}{r} -6x \\ 4x \\ \hline -2x \end{array} \text{ NO}$$

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

$$\begin{array}{r} 3x \\ -8x \\ \hline -5x \end{array} \text{ yes}$$

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

$$\begin{array}{r} -4x \\ +6x \\ \hline 2x \end{array} \text{ NO}$$

C.  $6x^2 - 24$

$$6(x^2 - 4)$$

$$6(x+2)(x-2)$$

C.  $(6x^3 - 5x^2y - 24xy + 20y^2)$

$$x^2(6x-5y) - 4y(6x-5y)$$

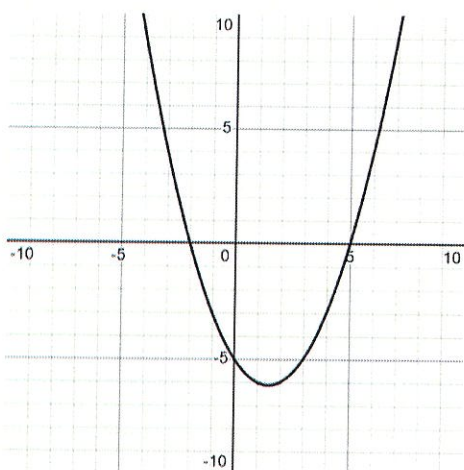
$$(x^2-4y)(6x-5y)$$

2. (TOPIC N2)

$y = f(x)$  is a quadratic function whose graph is shown. Write the factorization of  $f(x)$ .

Assume the leading coefficient is 0.5

PLACE A BOX AROUND YOUR ANSWER



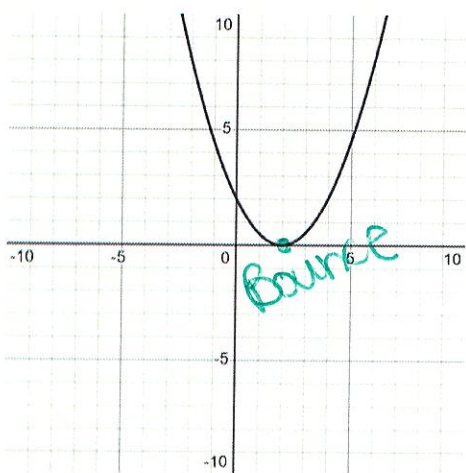
A.

Zeros:  $x = -2$  or  $x = 5$

Factors:  $(x+2)$ ,  $(x-5)$

Factorization:

$$f(x) = 0.5(x+2)(x-5)$$



B.

Zeros:  $x = 2$  or  $x = 2$

Factors:  $(x-2)$ ,  $(x-2)$

Factorization

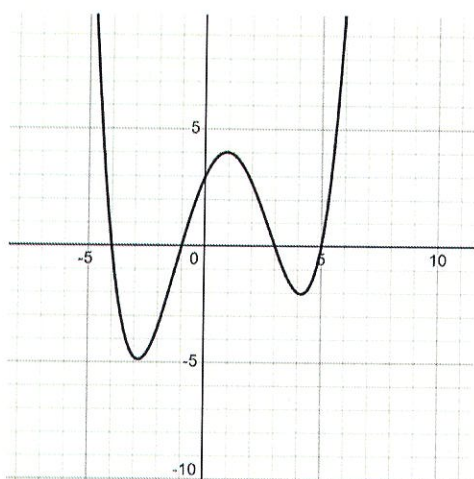
$$f(x) = 0.5(x-2)(x-2)$$

3. (TOPIC N2)

$y = f(x)$  is a polynomial function whose graph is shown. Write the factorization of  $f(x)$ .

Assume the leading coefficient is 0.05

PLACE A BOX AROUND YOUR ANSWER

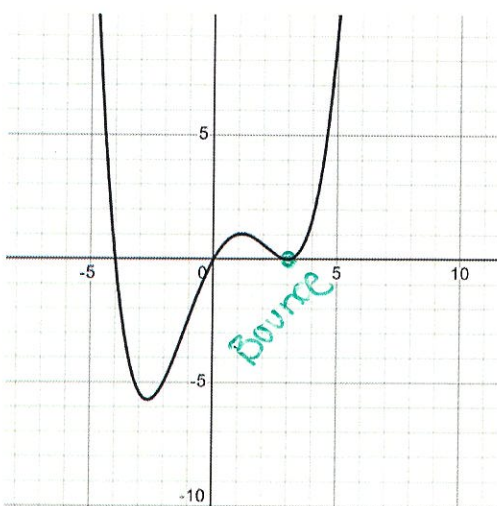


A.

$$x = -4 \quad x = -1 \quad x = 3 \quad x = 5$$

$$(x+4), (x+1), (x-3), (x-5)$$

$$f(x) = 0.05(x+4)(x+1)(x-3)(x-5)$$



B.

$$x = -4 \quad x = 0 \quad x = 3 \quad x = 3$$

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

$$f(x) = 0.05(x+4)(x)(x-3)(x-3)$$

4. Solve each equation which has already been factored.

PLACE A BOX AROUND YOUR ANSWER(S)

A.  $(2x-1)(4x+5)(x-2)(x+7)=0$

$$\begin{array}{cccc} 2x-1=0 & 4x+5=0 & x-2=0 & x+7=0 \\ \underline{+1} \quad \underline{+1} & \underline{-5} \quad \underline{-5} & \underline{+2} \quad \underline{+2} & \underline{-7} \quad \underline{-7} \end{array}$$

$$\frac{2x}{2} = \frac{1}{2}$$

$$x = \frac{1}{2}$$

$$\frac{4x}{4} = \frac{-5}{4}$$

$$x = -\frac{5}{4}$$

$$x = 2$$

$$x = -7$$

$$x = \frac{1}{2} \text{ or } x = -\frac{5}{4} \text{ or } x = 2 \text{ or } x = -7$$

B.  $x(x-5)(7x-1)(x+2)=0$

$$\begin{array}{cccc} x=0 & x-5=0 & 7x-1=0 & x+2=0 \\ & \underline{+5} \quad \underline{+5} & \underline{+1} \quad \underline{+1} & \underline{-2} \quad \underline{-2} \end{array}$$

$$x = 5$$

$$\frac{7x}{7} = \frac{1}{7}$$

$$x = \frac{1}{7}$$

$$x = -2$$

$$x = 0 \text{ or } x = 5 \text{ or } x = \frac{1}{7} \text{ or } x = -2$$

5. (TOPIC EP1). Simplify each expression involving the imaginary number  $i$ .  
Convert expressions of " $i$ " into a real number when applicable "add cinnamon."

$$i^2 = -1$$

PUT A BOX AROUND YOUR ANSWER

A.  $6i(2-5i)$

$$12i - 30i^2$$

$$12i - 30(-1)$$

$$12i + 30$$

$$\boxed{30 + 12i}$$

B.  $(7+2i)(7-2i)$

$$49 - 14i + 14i - 4i^2$$

$$49$$

$$-4(-1)$$

$$49$$

$$+4$$

$$\boxed{53}$$

C.  $8(5+4i)$

$$\boxed{40 + 32i}$$

D.  $-3i(6i)$

$$-18i^2$$

$$-18(-1)$$

$$\boxed{18}$$

E.  $(2i+3)(3i-5)$

$$6i^2 - 10i + 9i - 15$$

$$6(-1) - i - 15$$

$$\boxed{-6}$$

$$-i$$

$$\boxed{-15}$$

$$\boxed{-21 - i}$$

6. (TOPIC EP2) Simplify each radical expression.  
Allow for imaginary numbers by using "i" when needed.

PUT A BOX AROUND YOUR ANSWER

A.  $\sqrt{300}$

$\sqrt{100} \sqrt{3}$

$10\sqrt{3}$

B.  $9\sqrt{20}$

$9\sqrt{4} \sqrt{5}$

$9 \cdot 2 \sqrt{5}$

$18\sqrt{5}$

C.  $\sqrt{-18}$

$i \sqrt{9} \sqrt{2}$

$3i\sqrt{2}$

D.  $4\sqrt{-72}$

$4i \sqrt{36} \sqrt{2}$

$4i \cdot 6 \sqrt{2}$

$24i\sqrt{2}$