

DAILY QUEST:

Find the product.

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

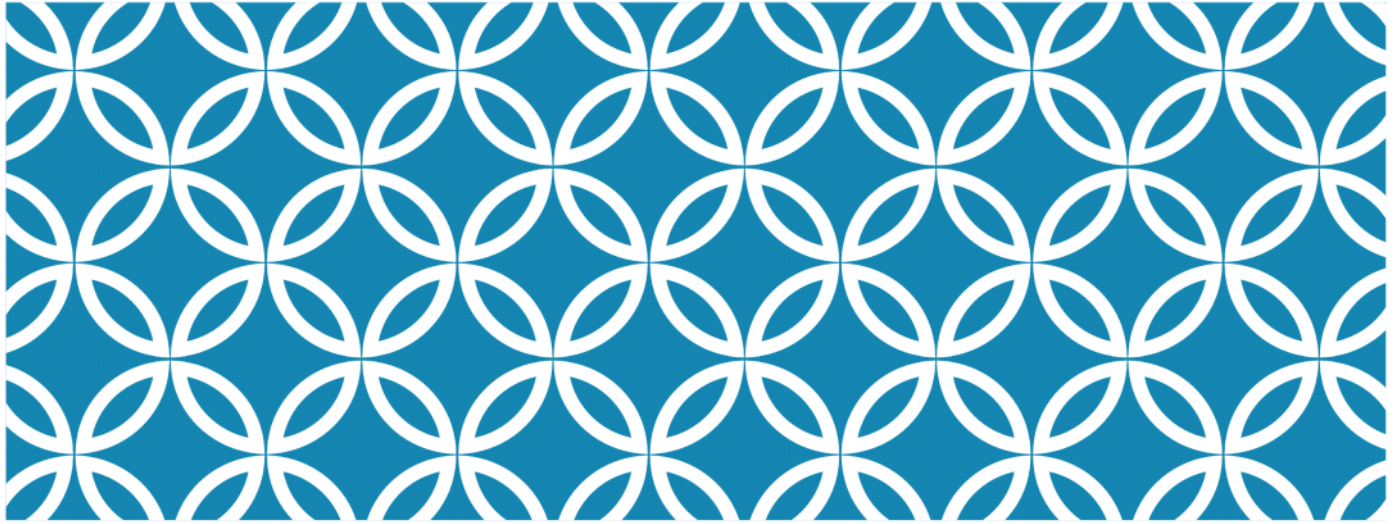
	$4x$	-4
$3x$	$12x^2$	$-12x$
1	$4x$	-4

$$12x^2 - 8x - 4$$

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

	x	4
x	x^2	$4x$
-3	$-3x$	-12

$$x^2 + x - 12$$



REVIEW FOR TEST

Goal: To identify, evaluate and use operations with expressions/polynomials.

PROBLEM 1:

Evaluate the expression given $z = 6$.

$$(5z \div 6)(2 + z)$$

$$(5(6) \div 6)(2 + 6)$$

$$(30 \div 6)(2 + 6)$$

$$(5)(2 + 6)$$

$$(5)(8)$$

$$\boxed{40}$$

$$(z - 2) \div 4 + z^2$$

$$(\underline{6 - 2}) \div 4 + 6^2$$

$$4 \div 4 + 6^2$$

$$4 \div 4 + 36$$

$$1 + 36$$

$$\boxed{37}$$

PROBLEM 1B:

Evaluate the expression when $x = 3$ and $y = -2$

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

$$4(3 - (-2))^2 + 5$$

$$4(5)^2 + 5$$

$$4(25) + 5$$

$$100 + 5$$

$$\boxed{105}$$

$$6(2x + 1) - 5y^2$$

$$6(2(3) + 1) - 5(-2)^2$$

$$6(6 + 1) - 5(-2)^2$$

$$6(7) - 5(-2)^2$$

$$6(7) - 5(4)$$

$$42 - 20$$

$$\boxed{22}$$

PROBLEM 2:

Write an equivalent expression in simplest form.

$$\boxed{7x - 6} + \boxed{3x - 9}$$

$$\boxed{10x - 15}$$

PROBLEM 2A:

Write an equivalent expression in simplest form.

$$\boxed{7x} - \underline{10} + \textcircled{6y} - \boxed{22x} + \underline{15} - \textcircled{9y}$$

$$-15x - 3y + 5$$

PROBLEM 3:

Which expressions below are equivalent? (hint: there is more than one)

- I. $14x + 16$
- II. $6x + 7 - 5 + 8x$
- III. $14x + 21 - 5$
- IV. $-2x + 16$
- V. $21 + 6x - 5 + 8x$

$$3(2x + 7) - 5 + 8x$$

$$6x + 21 - 5 + 8x$$

$$14x + 21 - 5$$

$$14x + 16$$

PROBLEM 3A:

Which expressions below are equivalent?

I. $3x - 6$

II. $6x - 3x - 12 - 9$

III. $3x - 21$

IV. $6x - 8x + 3 - 9 + 5x$

V. $-8x + 6x - 9 + 5x - 12$

$$6x - 4(2x + 3) - 9 + 5x$$

$\rightarrow 6x - 8x - 12 - 9 + 5x$

$\rightarrow 6x - 3x - 12 - 9$

$3x - 12 - 9$

$\rightarrow 3x - 21$

PROBLEM 4:

Write expressions for the statement below.

1) ⁺⁷ Seven more than ²ⁿ twice the number. $2n + 7$

→ 2) ⁻⁸ eight less than a number, y. $y - 8$

3) ⁵ⁿ five times a number ⁺⁶ plus six. $5n + 6$

4) ⁺³ three plus a quotient of a number ^{n and 4} on four.

$$n \div 4 + 3 \quad \text{or} \quad \frac{n}{4} + 3$$

PROBLEM 4A:

Write expressions for the statement below.

1) Ten less than three times the number. $3n - 10$

2) eleven less than a number. $n - 11$

3) two times a number plus six. $2n + 6$

4) A quotient of a number an five, increased by three.

$$n \div 5 + 6 \quad \text{or} \quad \frac{n}{5} + 6$$

PROBLEM 5:

Multiply.

$$\begin{array}{l} \text{Row} \\ 4x^2 \end{array} (3x^5 + 2x - 5)$$

	$3x^5$	$2x^1$	-5
$4x^2$	$12x^7$	$8x^3$	$-20x^2$

$$\underline{12x^7 + 8x^3 - 20x^2}$$

$$\begin{array}{l} -2x^1(6x^3 - 7x^1 + 4) \\ -12x^4 + 14x^2 - 8x \end{array}$$

PROBLEM 5A:

Multiply.

$$3x^4(x^3 + 5x + 2)$$

	x^3	$5x$	2
$3x^4$	$3x^7$	$15x^5$	$6x^4$

$$3x^7 + 15x^5 + 6x^4$$

~~$$-6x(2x^4 - 3x^2 + 1)$$~~

PROBLEM 6:

Identify the polynomials by terms. (monomial, binomial and trinomial)

- 1) $5 + 3x$ bi
- 2) $7x^2 + 5x - 8xy$ Tri
- 3) $345ab^2c$ mon.
- 4) $4x^2 - 8y^2$ bi
- 5) $9xy^2 + 4x + 1$ Tri

PROBLEM 7:

Find the product.

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

	$2x^2$	$-3x$	1
x	$2x^3$	$-3x^2$	$1x$
2	$4x^2$	$-6x$	2

$$2x^3 + 1x^2 - 5x + 2$$

PROBLEM 7A:

Find the product.

$$(x - 2)(3x^2 - 5x - 2)$$

	$3x^2$	$-5x$	-2
x	$3x^3$	$-5x^2$	$-2x$
-2	$-6x^2$	$10x$	4

$$3x^3 - 11x^2 + 8x + 4$$

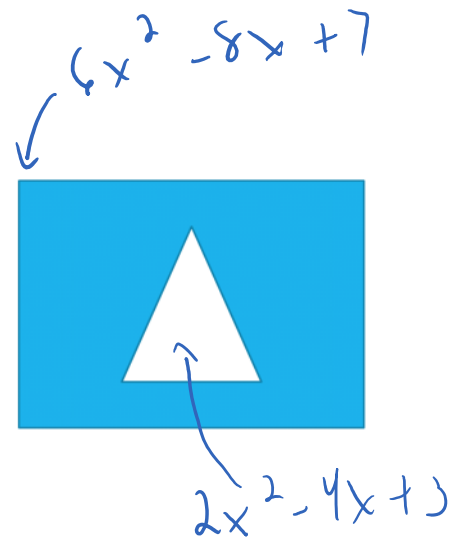
PROBLEM 8:

The area of the large rectangle is $6x^2 - 8x + 7$ and the area of the triangle is $2x^2 - 4x + 3$. What is the area of the shaded region?

$$(6x^2 - 8x + 7) - (2x^2 - 4x + 3)$$

$$\boxed{6x^2} \quad \textcircled{-8x} \quad + \underline{7} \quad \boxed{-2x^2} \quad \textcircled{+4x} \quad \underline{-3}$$

$$4x^2 - 4x + 4$$



PROBLEM 8A:

The area of the large rectangle is $7x^2 - 2x + 9$ and the area of the triangle is $3x^2 - 5x - 6$. What is the area of the shaded region?

$$(7x^2 - 2x + 9) - (3x^2 - 5x - 6)$$
$$\boxed{7x^2} - 2x + 9 \quad \boxed{-3x^2} + 5x + 6$$

$$4x^2 + 3x + 15$$

