5.5

Friday, October 16, 2020   3:43 PM
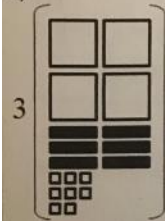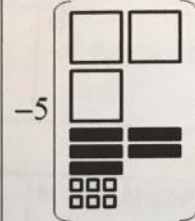
1. Write the polynomial difference modelled by each set of tiles.

a)
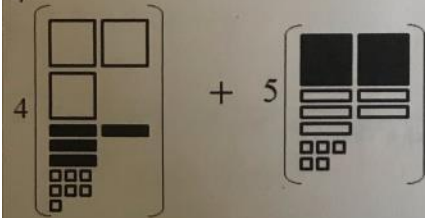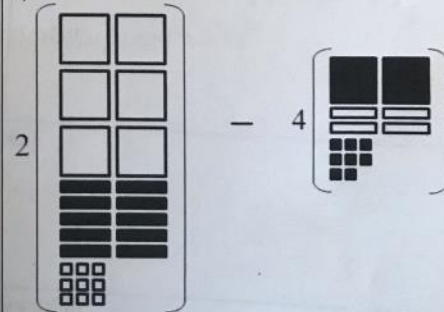
$12x^2 - 18x + 27$

b)

$-15x^2 + 25x - 30$

c)

$12x^2 - 16x + 28 - 10x^2 + 25x + 25$

$2x^2 + 9x + 53$

d)

$12x^2 - 20x + 18 + 8x^2 - 16x + 32$

$20x^2 - 36x + 50$

2. Multiply.

a)	b)
$2(4x^2 + 8x + 3)$ $8x^2 + 16x + 6$	$-3(6x^2 - 7x + 4)$ $-18x^2 + 21x - 12$
c)	d)
$2(-3x^2 + 9x - 11)$ $-6x^2 + 18x - 22$	$-5(-7x^2 + 4x - 6)$ $35x^2 - 20x + 30$

3. Simplify.

a) $(3x + 2) + 5(-2x + 5)$ $-7x + 27$	b) $3(x + 2) + (3x^2 + 5x - 1)$ $3x^2 + 8x + 5$
c) $5(-2x^2 + 3x - 6) + 7(x^2 + 4x + 3)$ $-3x^2 + 43x - 9$	d) $(-9x + 5x^2 - 4) + 4(3 - 4x^2 + 8x)$ $-11x^2 + 23x + 8$
e) $6(4x - 11x^2 + 12) - 5(15 - 8x - 9x^2)$ $-21x^2 + 6x - 3$	f) $5(2x^2 - 3xy + 4y^2) - 7(-2xy + 5x^2 - y^2)$ $-25x^2 - xy + 27y^2$

g) $8(-6x^3 - 5x^2) - 5(x^3 + 7x^2 + 9x) + (12x^3 + 4x^2 + 10x)$

$41x^3 - 31x^2 - 35x$

h) $12(x^2y - 5xy - 4y) + 5(7x^2y + 5y - 10xy) - 8(-2xy + 4x^2y)$

$12x^2y - 60xy - 48y + 35x^2y + 25y - 50xy + 16xy - 32x^2y$

$15x^2y - 94xy - 23y$

i) $3(10x^2y - 8xy^2 - 5xy + 12x) - 4(-7x + 9x^2y - 15y^2x - 4yx) - 5(-xy + 10yx^2)$

$30x^2y - 24xy^2 - 15xy + 36 + 28x - 36x^2y + 60xy^2 + 16xy + 5xy - 50x^2y$

$-56x^2y + 36xy^2 + 6xy + 28x + 36$

4. Determine the answer to each of the following.

a) $9x(x+5) - 7(4-7x)$

$9x^2 + 45x - 28 + 49x$

$9x^2 + 94x - 28$

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

$-6x^2 + 2xy - x^2 - 4xy$

$-7x^2 - 2xy$

c) $9x(2xy + 3x + 5y) - 4(7xy - 3x - 6y)$

$18x^2y + 27x^2 + 45xy - 28xy + 21x + 24y$

$18x^2y + 27x^2 + 17xy + 21x + 24y$

d) $-3x(x+4y) + 2(x^2 - 3y) - 5y(x^2 - x)$

$-3x^2 - 4xy + 2x^2 - 6y - 5x^2y + 5xy$

$-5x^2y - x^2 + xy - 6y$

e) $-5x(xy + y + 3) + 6y(x-y-2) - 8xy(x+2)$

$-5x^2y - 5xy - 15x + 6xy - 6y^2 - 12y - 8x^2y - 16xy$

$-13x^2y - 6y^2 - 15xy - 15x - 12y$

5. The perimeter of a triangle is $6x^2 + 7x - 12$. Find the missing side.

$2x^2 - 6x + 3$

$3x^2 + 5x + 6$
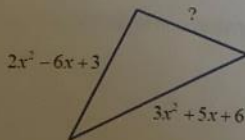
$5x^2 - x + 9$

$x^2 + 8x - 21$

6. The perimeter of a triangle is $12y - 8z$. Two sides are $3y + 5z$ and $2y$. What is the other side?

$5y + 5z$

$6y - 13z$

7. The perimeter of a triangle is $7x^2 - 5x + 8$. Two sides are $4x + 3$ and $3x^2 + 7x - 3$. What is the other side?
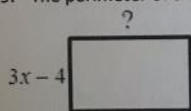
$3x^2 + 11x$

$4x^2 - 16x + 8$

8. If the side length of a square is $3m - 2$, then find the perimeter of the square.

$4(3m - 2)$

$12m - 8$

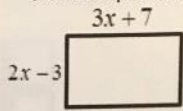9. The perimeter of a rectangle is $24x + 15$ and the width is $3x - 4$. What is the length?

?

$3x - 4$ [rectangle]

$6x - 8$

$\dfrac{18x + 23}{2} = 9x + \dfrac{23}{2}$

10. The perimeter of a rectangle is $15y + 8x$ and the length is $3x - 5y$. What is the width?

$15y + 8x$
$- \ -10y + 6x$
$25y + 2x$

$\dfrac{25y + 2x}{2} = \dfrac{25y}{2} + x$

11. If the length of this rectangle is increased by two and the width is decreased by five, then determine the new expression for the perimeter.
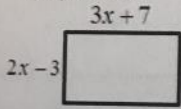
$3x + 7$

$2x - 3$ ▭

$2\left(2+(3x+7)+(2x-3)-5\right)$

$2\left(3x+7+2x-15\right)$

$8x - 16$

12. If the length of this rectangle is doubled and the width tripled, then determine the new expression for the perimeter.

$3x + 7$

$2x - 3$ ▭

$2\left(2(3x+7)+3(2x-3)\right)$

$2\left(6x+14+6x-9\right)$

$24x + 10$