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QUESTIONS

2, 6 , 9, 10 , 11 , 12 a, d

15 a, c, e, g,h, 16 , 19 b

22 a,c,h,k,l, 24 a,

26 b,d,f,h 28 b, d, f

29 a, b

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QUESTIONS
1 TO 8

Review

2) Complete the following chart:

	Type	Variable	Coefficient	Constant	Degree
a) $4w - 3$	bi	w	4	-3	1
b) $5v^2 + 3$	bi	V	5	3	2
c) $5y - 6 - y^2$	Tri	Y	5,-1	-6	2

6)Write the polynomial expression that is represented by the following algebra tiles

a)

$4x + 3$

b)

$2x^2 - 2x + 6$

c)

$-x^2 - 9$

9. Identify like terms.

a) $5x^2, 3y^2, -2x^2, 5x, 2y$

$5x^2, -2x^2$

b) $-8x, 5x, 8, -2, -x, 11$

$-8x, 5x, -x$

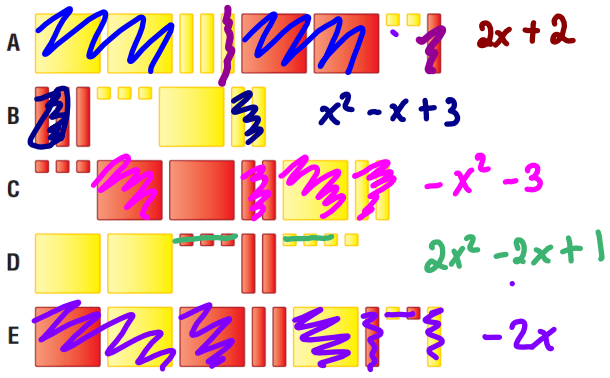
$8, -2, 11$

10. Match each algebra tile model below with its corresponding polynomial.

a) $n^2 - n + 3$ (B) b) $-w^2 - 3$ (C)

c) $-2t$ (E) d) $2q + 2$ (A)

e) $2r^2 - 2r + 1$ (D)



11. Write an expression with 5 terms that has only 3 terms when simplified.

Many answers

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

12. Simplify by combining like terms.

a) $3x + 4 - 2x - 8 + 3x - 3$

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

$4x - 7$

d) $2a^2 + 3a + 3a^2 - a^2 - a - 4a^2$

$2a^2 + 3a^2 - a^2 - 4a^2 + 3a - a$

$2a$

15. Add or subtract as indicated.

a) $(p^2 + 3p + 5) + (3p^2 + p + 1)$

$p^2 + 3p + 5 + 3p^2 + p + 1$

$p^2 + 3p^2 + 3p + p + 5 + 1$

$4p^2 + 4p + 6$

c) $(6 - 3r + 7r^2) - (9 + 4r + 3r^2)$

$6 - 3r + 7r^2 - 9 - 4r - 3r^2$

$7r^2 - 3r^2 - 3r - 4r + 6 - 9$

$4r^2 - 7r - 3$

e) $(-4t^2 - 3t + 9) - (-2t^2 - 5t - 1)$

$-4t^2 - 3t + 9 + 2t^2 + 5t + 1$

$-4t^2 + 2t^2 - 3t + 5t + 9 + 1$

$-2t^2 + 2t + 10$

g) $(3a^2 + 5ab - 7b^2) + (3b^2 - 10ab - 7a^2)$

$3a^2 + 5ab - 7b^2 + 3b^2 - 10ab - 7a^2$

$3a^2 - 7a^2 - 7b^2 + 3b^2 + 5ab - 10ab$

$-4a^2 - 4b^2 - 5ab$

h) $(10xy - 3y^2 + 2x) - (5y - 4x^2 + xy)$

$10xy - 3y^2 + 2x - 5y + 4x^2 - xy$

$4x^2 - 3y^2 - 10xy - xy + 2x - 5y$

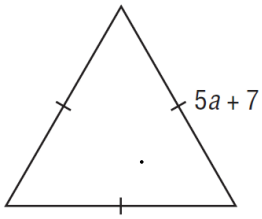
$4x^2 - 3y^2 - 11xy + 2x - 5y$

16. The sum of two polynomials is $15c + 6$. One polynomial is $3c - 7$. What is the other polynomial? Explain how you found it.

$$\begin{array}{r} 3c - 7 \\ +(12c + 13) \\ \hline 15c + 6 \end{array}$$

19. Write a polynomial for the perimeter of each shape. Simplify the polynomial. Determine each perimeter when $a = 3$ cm.

b)



a) $P = 3(5a+7)$

$P = 15a + 21$

b) $P = 15(3) + 21$

$P = 45 + 21$

$P = 66$ cm

22. Determine each product or quotient.

a) $10k \div 2$

$= 5k$

c) $2(-3m + 4)$

$-6m + 8$

h) $-2(1 - 2n + 3n^2)$

$-2 + 4n - 6n^2$

$-6n^2 + 4n - 2$

k) $\dfrac{15 - 21q + 6q^2}{-3}$

$-5 + 7q - 2q^2$

$-2q^2 + 7q - 5$

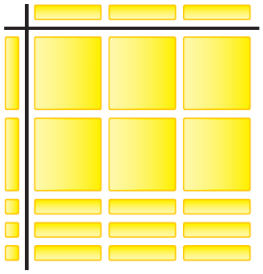
l) $(2 + 5n - 7n^2)(-6)$

$-12 - 30n + 42n^2$

$42n^2 - 30n - 12$

5.6 **24.** Write the multiplication sentence modelled by each diagram.

a)



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

$= 6x^2 + 9x$

26. Determine each product.

b) $(-3g)(-5g)$

$15g^2$

d) $-5t(t-3)$

$-5t^2 + 15t$

f) $(-3f-5)(-2f)$

$6f^2 + 10f$

h) $y(1-y)$

$y - y^2$

28. Determine each quotient.

b) $\frac{24x}{3x}$

$= 8$

d) $(-8a^2 - 12a) \div 4a$

$= 2a - 3$

f) $\frac{14y^2 - 21y}{-7y}$

$= 2y + 3$

29. a) The area of a rectangular deck is $(8d^2 + 20d)$ square metres. The deck is $4d$ metres long. Determine a polynomial that represents the width of the deck.

$A = l \times w$

$w = \frac{A}{l}$

$w = \frac{8d^2 + 20d}{4d}$

$\boxed{w = 2d + 5}$

b) What are the dimensions and area of the deck when d is 4 metres?

$l = 4d$

$l = 4(4)$

$l = 16 \text{ cm}$

$w = 2d + 5$

$w = 2(4) + 5$

$w = 8 + 5$

$w = 13 \text{ cm}$

$A = 8d^2 + 20d$

$A = 8(4)^2 + 20(4)$

$A = 8(16) + 80$

$A = 128 + 80$

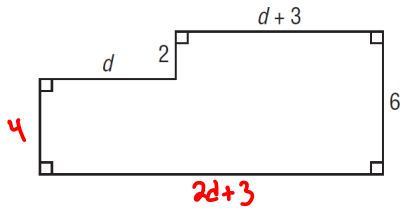
$A = 208 \text{ cm}^2$

Practice Test

1. a) Which polynomial in t do these tiles represent?

$2t^2 - 6t + 4$

2. a) Write a polynomial for the perimeter of this shape. Simplify the polynomial.



$P = d + 2 + d + 3 + 6 + 2d + 3 + 4$

$P = d + d + 2d + 2 + 3 + 6 + 3 + 4$

$P = 4d + 18$

b) Determine the perimeter of the shape when $d = 5$ m.

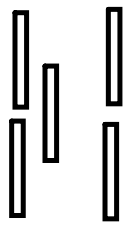
$P = 4(5) + 18$

$P = 20 + 18$

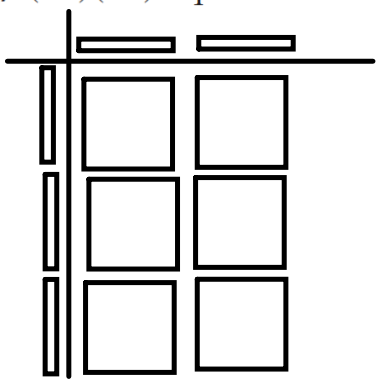
$P = 38$ m

3. Sketch algebra tiles to explain why:

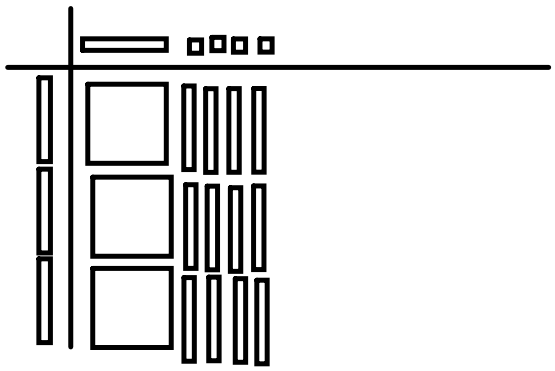
a) $3x + 2x$ equals $5x$



b) $(3x)(2x)$ equals $6x^2$



4. A student determined the product $3r(r + 4)$.
The student's answer was $3r^2 + 4$.
Use a model to explain whether the student's answer is correct.



$(3r)(r+4)$

$3r^2+12r$

5. Add or subtract as indicated.

a) $(15 - 3d) + (3 - 15d)$

$15-3d+3-15d$

$-15d-3d+15+3$

$-18d+18$

b) $(9h + 3) - (9 - 3h^2)$

$9h+3-9+3h^2$

$3h^2+9h+3-9$

$3h^2+9h-6$

d) $(7y^2 + y) - (3y - y^2)$

$7y^2+y-3y+y^2$

$7y^2+y^2+y-3y$

$8y^2-2y$

c) $(2y^2 + 5y - 6) + (-7y^2 + 2y - 6)$

$2y^2+5y-6-7y^2+2y-6$

$2y^2-7y^2+5y+2y-6-6$

$-5y^2+7y-12$

6. Multiply or divide as indicated.

a) $25m(3m - 2)$

$75m^2 - 50m$

b) $-5(3v^2 - 2v - 1)$

$-15v^2 + 10v + 5$

c) $(8x^2 - 4x) \div 2x$

$4x - 2$

d) $\dfrac{-6 + 3g^2 - 15g}{-3}$

$2 - g^2 + 5g$

$-g^2 + 5g + 2$

7. Determine two polynomials with:

a) a sum of $3x^2 - 4x - 2$

$(x^2 - x + 5)$

$+ (2x^2 - 3x - 7)$

$3x^2 - 4x - 2$

b) a difference of $3x^2 - 4x - 2$

$(x^2 + x + 1)$

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

$3x^2 - 4x - 2$

Many Possible answers

8. A rectangle has dimensions $5s$ and $3s + 8$.

a) Sketch the rectangle and label it with its dimensions.

b) What is the area of the rectangle?

c) What is the perimeter of the rectangle?

b) $A = 5s(3s+8)$

$A = 15s^2 + 40s$

c) $P = 5s+5s+3s+8+3s+8$

$P = 5s+5s+3s+3s+8+8$

$P = 16s+16$