

Frogs, Fleas, and Painted Cubes Investigations 1-2.4 Checkup

Multiple Choice: Identify the choice that best completes the statement or answers the question. Put your answer on the answer sheet provided.

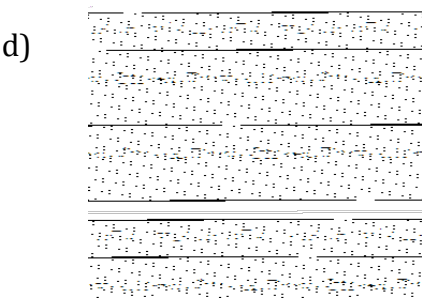
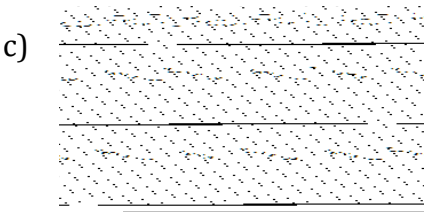
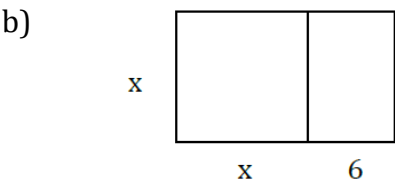
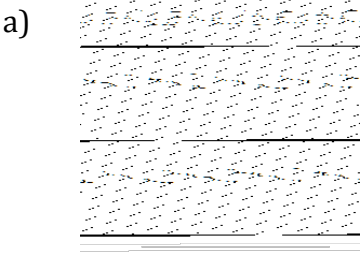
Ms. Alter wants to create a rectangular “Time Out” section in her classroom for 8R students who talk too much during class. She has a fixed amount of rope to use to make the rectangular area. She uses the table below to look at possible arrangements.

Length (ft)	Area (ft ²)
1	9
2	16
3	21
4	24
5	25
6	24
7	21
8	16
9	9

- What is the fixed perimeter for the possible “Time Out” areas?
 - 100 ft.
 - 40 ft.
 - 80 ft.
 - 50 ft.
 - None of these
- Which equation below would give the area in terms of the length for Ms. Alter’s “Time Out” section?
 - $A = \ell(20 - \ell)$
 - $A = \ell(100 - \ell)$
 - $A = \ell(40 - \ell)$
 - $A = \ell(10 - \ell)$
 - None of these
- What type of relationship is the one between area and length in the “Time Out” problem?
 - Quadratic
 - Linear
 - Inverse
 - Exponential
 - None of these
- What is an estimate for the dimensions given by the rectangle in the “Time Out” problem having an area of 18.75 ft²?
 - 3.125 x 6 ft.
 - 1.5 x 7.5 ft.
 - 3 x 6.25 ft.
 - 2.08 x 9 ft.
 - None of these

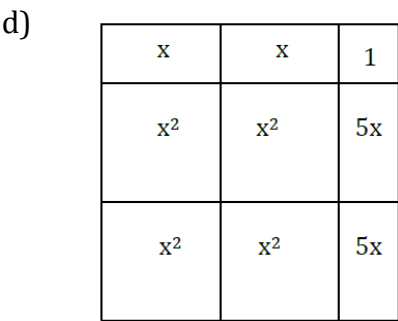
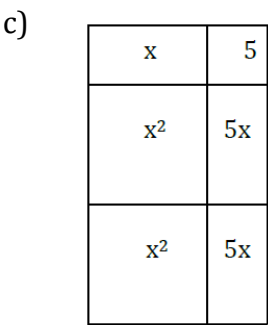
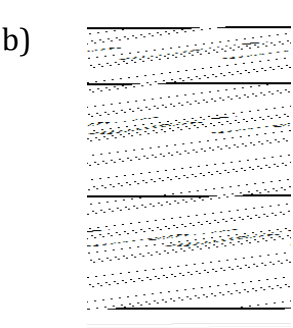
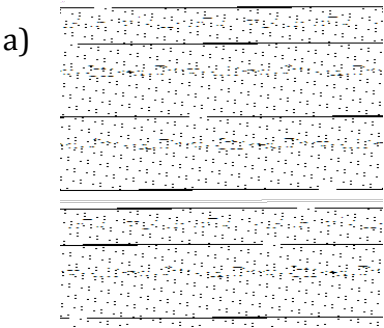
Choose the area models that match the expressions below.

5. $x^2 - x - 6$



e) None of these.

6. $(2x + 1)(x+5)$



e) None of these.

Write each expression in simplest form.

7. $-10x^5 + 2x^2 + 2x^5$

a) $-6x^{12}$

b) $-8x^{10} + 2x^2$

c) $-12x^5 + 2x^2$

d) $-8x^5 + 2x^2$

e) None of these

8. $(-10x^5)(2x^2)(2x^5)$

a) $\frac{1}{40x^{12}}$

b) $-6x^{12}$

c) $\frac{1}{-40x^{12}}$

d) $-40x^{50}$

e) None of these

Expand the following, and write in simplest form.

9. $(x+2)(x+9)$

a) $x^2 + 18$

b) $x^2 + 11x + 11$

c) $x^2 + 11x + 18$

d) $x^2 + 9x + 20$

e) None of these

10. $(3x - 9)(x + 4)$

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

b) $3x^2 + 3x - 36$

c) $3x^2 + 21x - 5$

d) $3x^2 + 21x - 36$

e) None of these

11. $(x^2 - 8)(x^2 - x - 4)$

a) $-12x^2 + 8x + 32$

b) $-x^3 - 10x^2 + 8x + 32$

c) $x^4 - 12x^2 + 8x + 32$

d) $x^4 - x^3 - 12x^2 + 8x + 32$

e) None of these

12. $(3x^2 - 7x + 1)(2x + 3)$

a) $x^2 - 19x + 3$

b) $6x^3 + 23x^2 - 19x + 3$

c) $5x^3 - 5x^2 - 19x + 3$

d) $6x^3 + 9x^2 - 33x + 3$

e) None of these

13. $(x - 6)^2$

a) $x^2 + 36$

b) $x^2 - 36$

c) $x^2 - 12x - 36$

d) $x^2 + 12x + 36$

e) None of these

14. $(4x - 7)(4x + 7)$

a) $16x^2 - 49$

b) $8x^2 - 49$

c) $16x^2 + 56x - 49$

d) $8x^2 - 56x - 49$

e) None of these

15. $(x + 4)(x^2 - 6x + 2)$

a) $x^3 - 4x^2 - 20x + 8$

b) $x^3 - 2x^2 - 20x + 8$

c) $x^3 - 22x + 8$

d) $x^3 + 8x^2 + 28x + 6$

e) None of these

Factor the following:

16. $x^2 - 8x + 15$

a) $(x - 5)(x + 3)$

b) $(x + 5)(x + 3)$

c) $(x + 5)(x - 3)$

d) $(x - 3)(x - 5)$

e) None of these

17. $m^2 - 121$

a) $(m + 11)(m + 11)$

b) $(m - 11)(m + 11)$

c) $(m + 11)^2$

d) $(m - 11)^2$

e) None of these

18) $k^2 - 16k + 64$

a) $(k - 8)(k + 8)$

b) $(k - 8)^2$

c) $(k - 4)(k - 16)$

d) $(k - 32)(k - 2)$

e) None of these

19) $-7 - 5w + 2w^2$

a) $(7 + w)(-1 + 2w)$

b) $(-1 + 2w)(7 + w)$

c) $(2w - 1)(w + 7)$

d) $(2w - 7)(w + 1)$

e) None of these

20) $6c^2 + 13c + 6$

a) $(6c + 2)(c + 3)$

b) $(3c - 2)(2c - 3)$

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

d) $(6c + 1)(c + 6)$

e) None of these