

Frogs, Fleas and Painted Cubes Investigation 1-2.4 (round 2)

Multiple Choice: Identify the choice that best completes the statement or answers the question. Write the capital letter of your choice on the front page answer sheet.

- _____ 1. Dr. P really liked Ms. Alter's rectangular "Time Out" section in her classroom for 8R students that talked too much during class and decided to create one for her room as well. Dr. P has a fixed amount of rope to use to make the rectangular area. She uses the table to look at possible arrangements.

Length(ft)	5	10	15	20	25	30	35
Area(ft ²)	175	300	375	400	375	300	175

What is the perimeter for the possible "Time Out" areas?

- A. 200 feet C. 150 feet E. 120 feet
 B. 100 feet D. 80 feet F. 60 feet
- _____ 2. Which equation would give the area in terms of the length for Dr. P's "Time Out" section?
 A. $A = l(10 - l)$ C. $A = l(20 - l)$ E. $A = l(30 - l)$
 B. $A = l(40 - l)$ D. $A = l(50 - l)$ F. $A = l(60 - l)$
- _____ 3. What type of relationship is the one between area and length in the "Time Out" problem?
 A. linear C. quadratic E. exponential growth
 B. exponential decay D. inverse variation F. cubic
- _____ 4. What is the estimate for the dimensions given by the rectangle in the "Time Out" problem having an area of 343.75ft^2 ?
 A. $12.5 \times 27.5\text{ft.}$ C. $11.5 \times 30.5\text{ft.}$ E. $5 \times 68.75\text{ft.}$
 B. $10.5 \times 32.75\text{ft.}$ D. $15.5 \times 21.5\text{ft.}$ F. $24.5 \times 14.5\text{ft.}$
- _____ 5. Write the expression in simplest form. $3a^4 - 12a^5 - 7a^4$
 A. $-16a^{13}$ C. $-4a^8 - 12a^5$ E. $10a^4 - 12a^5$
 B. $-4a^4 - 12a^5$ D. $-10a^4 - 12a^5$ F. $-16a^{100}$

_____ 6. Write the expression in simplest form. $(-3a^4)(2a^5)(7a^4)$

A. $\frac{1}{42^{100}}$

C. $6a^{13}$

E. $-\frac{1}{42a^{100}}$

B. $-42a^{13}$

D. $-42a^9$

F. $-42a^{100}$

_____ 7. $8y(3y+5)$

A. $11y^2 + 13y$

C. $24y^2 + 40y$

E. $64y^2$

B. $24y^2 + 13y$

D. $11y^2 + 40y$

F. $29y^2$

_____ 8. $(3y-5)(3y+5)$

A. $9y^2 - 15y - 25$

C. $6y^2 - 25$

E. $9y^2 - 25$

B. $9y - 25$

D. $9y^2 + 25$

F. $9y^2 - 30y - 25$

_____ 9. $(6v-5)(3v+7)$

A. $18v^2 + 57v - 35$

C. $18v^2 - 27v - 35$

E. $18v^2 - 42v - 35$

B. $18v^2 - 21v - 35$

D. $18v^2 + 42v - 35$

F. $18v^2 + 27v - 35$

_____ 10. $(4k+3)(4k-3)$

A. $8k^2 - 9$

C. $16k^2 - 24k - 9$

E. $8k^2$

B. $16k^2 - 9$

D. $16k^2 + 9$

F. $8k$

_____ 11. $(7x-5)^2$

A. $14x^2 - 25$

C. $49x^2 + 25$

E. $49x^2 - 25$

B. $49x^2 - 24x + 25$

D. $49x^2 - 70x + 25$

F. $49x^2 + 70x - 25$

_____ 12. $(7w-3)(w^2-2w+7)$

A. $7w^3 - 21w - 21$

C. $7w^3 - 14w^2 + 6w - 21$

E. $7w^3 - 4w^2 + 16w - 21$

B. $7w^3 - 17w^2 - 43w - 21$

D. $7w^3 - 21$

F. $7w^3 - 17w^2 + 55w - 21$

_____ 13. $4n^2 + 20$

A. $(2n+4)(2n-5)$

C. $4(n^2 + 5)$

E. $(4n-5)(n-4)$

B. $4n(n+5)$

D. $(2n+5)(2n+4)$

F. $4(n+5)(n+4)$

_____ 14. $9x^2y^2 + 6xy^3$

A. $3xy^2(3x+2y)$

C. $3xy^2(3x-2y)$

E. $3xy^2(2x+3y)$

B. $3xy^2(2x-3y)$

D. $3y^2(3x+2y)$

F. $3xy(3x+2y)$

_____ 15. $4h^2 - 11h + 7$

A. $(4h+7)(h+1)$

C. $(4h+7)(h-1)$

E. $(4h-7)(h-1)$

B. $(4h-1)(h-7)$

D. $(4h+1)(h-7)$

F. $(4h-7)(h+1)$

_____ 16. $8u^2 - 5u - 3$

A. $(8u-3)(u-1)$

C. $(8u+3)(u+1)$

E. $(8u+1)(u-3)$

B. $(8u+3)(u-1)$

D. $(8u-3)(u+1)$

F. $(8u+1)(u-3)$

_____ 17. $9m^2 + 15m + 4$

A. $(-3m-1)(3m-4)$

C. $(3m-1)(3m+4)$

E. $(3m-4)(3m-1)$

B. $(3m+1)(3m-4)$

D. $(3m+4)(-3m+1)$

F. $(3m+1)(3m+4)$

_____ 18. $25c^2 - 81$

A. $(5c - 9)(5c - 9)$

C. $(5c + 9)(9c - 5)$

E. $(9c + 5)(5c - 9)$

B. $(5c + 9)(5c + 9)$

D. $(5c + 9)(5c - 9)$

F. $(9c + 5)(9c - 5)$

_____ 19. $4x^2 - 16$

A. $(2x + 4)^2$

C. $4(x^2 - 16)$

E. $2(x + 2)(x - 2)$

B. $4(x - 2)(x + 2)$

D. $(2x + 1)(2x - 16)$

F. $2x(2x - 8)$

_____ 20. $-36 + a^2$

A. $(6 + a)(-6 - a)$

C. $(a + 6)(a - 6)$

E. $(a - 6)^2$

B. $(6 + a)^2$

D. $(-a - 6)^2$

F. $(-6 + a)(6 - a)$

21. Bonus:

2	15×			8+
1−	60×	2÷		
			9+	
6×		1−		
		4	4−	

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Answer Section

MULTIPLE CHOICE

1. D
2. B
3. C
4. A
5. B
6. B
7. C
8. E
9. F
10. B
11. D
12. F
13. C
14. A
15. E
16. B
17. F
18. D
19. B
20. C

SHORT ANSWER

21. .