MNAS

Holiday Take Home Quiz

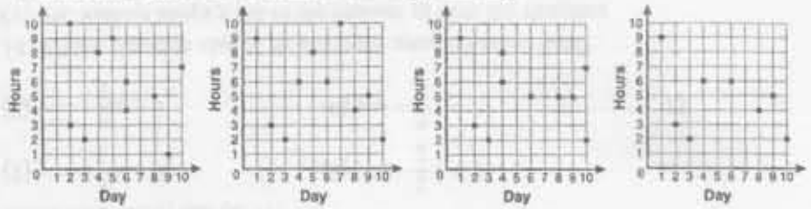
INTEGRATED ALGEBRA
2007 – Fall Sampler
Part I

Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write in the space provided the numeral preceding the word or expression that best completes the statement or answers the question. [60]

1. For 10 days, Romero kept a record of the number of hours he spent listening to music. The information is shown in the table below.

Day	1	2	3	4	5	6	7	8	9	10
Hours	9	3	2	6	8	6	10	4	5	2

Which scatter plot shows Romero's data graphically?



(1) (2) (3) (4)

1 _____

2. Throughout history, many people have contributed to the development of mathematics. These mathematicians include Pythagoras, Euclid, Hypatia, Euler, Einstein, Agnesi, Fibonacci, and Pascal. What is the probability that a mathematician's name selected at random from those listed will start with either the letter *E* or the letter *A*?

(1) $\frac{2}{8}$ (3) $\frac{3}{8}$ (2) $\frac{4}{8}$ (4) $\frac{6}{8}$ 2 _____

3. Which expression represents $\frac{(2x^3)(8x^5)}{4x^6}$ in simplest form?

(1) x^2 (2) x^9 (3) $4x^2$ (4) $4x^9$ 3 _____

4. Which interval notation represents the set of all numbers from 2 through 7, inclusive?

(1) (2, 7] (2) (2, 7) (3) [2, 7) (4) [2, 7] 4 _____

5. Which property is illustrated by the equation $ax + ay = a(x + y)$?

(1) associative (3) distributive
(2) commutative (4) identity 5 _____

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6. The expression $x^2 - 16$ is equivalent to

(1) $(x + 2)(x - 8)$ (3) $(x + 4)(x - 4)$
(2) $(x - 2)(x + 8)$ (4) $(x + 8)(x - 8)$ 6 _____

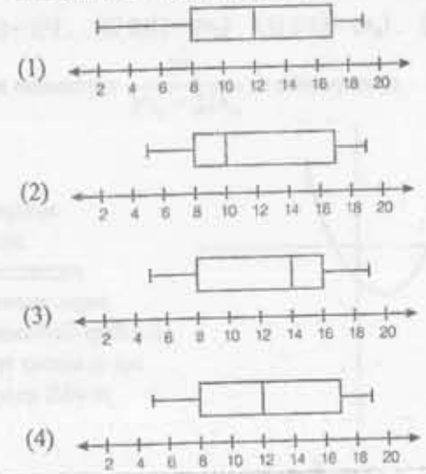
7. Which situation describes a correlation that is *not* a causal relationship?

(1) The rooster crows, and the Sun rises.
(2) The more miles driven, the more gasoline needed.
(3) The more powerful the microwave, the faster the food cooks.
(4) The faster the pace of a runner, the quicker the runner finishes. 7 _____

8. The equations $5x + 2y = 48$ and $3x + 2y = 32$ represent the money collected from school concert ticket sales during two class periods. If x represents the cost for each adult ticket and y represents the cost for each student ticket, what is the cost for each adult ticket?

(1) \$20 (2) \$10 (3) \$8 (4) \$4 8 _____

9. The data set 5, 6, 7, 8, 9, 9, 9, 10, 12, 14, 17, 17, 18, 19, 19 represents the number of hours spent on the Internet in a week by students in a mathematics class. Which box-and-whisker plot represents the data?



9 _____

10. Given: Set $A = \{(-2, -1), (-1, 0), (1, 8)\}$
Set $B = \{(-3, -4), (-2, -1), (-1, 2), (1, 8)\}$.

What is the intersection of sets A and B?

(1) {(1,8)} (3) {(–2,–1), (1,8)}
(2) {(–2,–1)} (4) {(–3,–4), (–2,–1), (–1,2), (–1,0), (1,8)} 10 _____