

Name: _____

2022 Grade 7 December Semester Exam Review

1. Joe recorded the number of books he reads each week. What is the constant of proportionality between the number of books read and the weeks spent reading? **7.4C**

- A 4 books a week
- B 1 book a week
- C 6 books a week
- D 2 books a week

Weeks	Number of Books Read
2	4
3	6
4	8
5	10

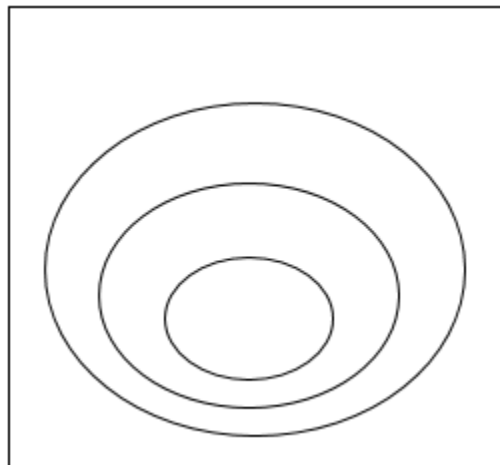
2. Correctly label the Venn diagram below to show the relationship between the subsets of real numbers. **7.2A**

Integer

Whole

Natural

Rational



3. Ice cream sundaes at Shelly's café each cost \$4.25, and there is a \$0.30 charge for each additional topping. If Carrie wants a sundae and only has \$5.00 to spend, which inequality is used to find the greatest number of toppings that Carrie could afford?

7.10A

- A $\$4.25 + \$0.30x \geq \$5.00$
- B $\$4.25 + \$0.30x \leq \$5.00$
- C $\$4.55x \leq \5.00
- D $\$4.25 - \$0.30x \geq \$5.00$

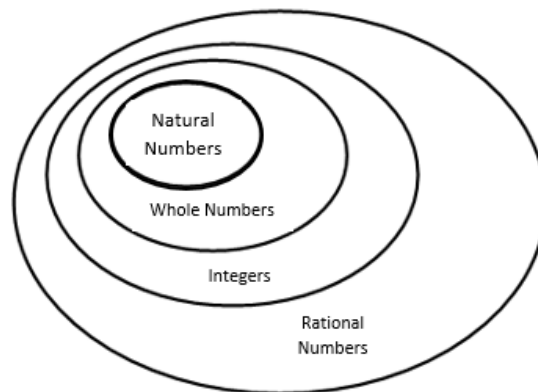
4. What is the solution to this equation? **7.11A**

$$4n + 3.1 = 7.5$$

5. Pat read 97.5 pages during a 2.5-hour period one afternoon. If Pat read at a constant rate, how many pages did he read each hour? **7.4B**

- A 95 pages each hour
- B 48.5 pages each hour
- C 39 pages each hour
- D 32.5 pages each hour

6. Use the diagram below to answer which set or sets each number belongs. **7.2A**



Which set or sets does the number $\frac{1}{8}$ apply?

Which set or sets does the number -16 apply?

Which set or sets does the number 79 apply?

Which set or sets does the number -4.8 apply?

Which set or sets does the number 0 apply?

7. In which equation below does x NOT have a value of 8? **7.11B**

A $8x = 64$

B $2x + 4 = 20$

C $4x + 7 = 40$

D $5x - 8 = 32$

8. This table shows the number of calories for different servings of strawberries. What is the constant rate of change between the number of servings and the number of calories? **7.4A**

Number of Servings (cups)	3	6	8	10
Number of Calories	141	282	376	470

A 47 calories per serving

B 423 calories per serving

C 70.5 calories per serving

D 32 calories per serving

9. The model represents an equation. What is the value of x ? **7.11A**

$x \quad x \quad x \quad - \quad - \quad - = \begin{matrix} + & + & + & + \\ + & + & + & + & + \end{matrix}$

Key	
$\oplus = +1$	$\ominus = -1$

10. Susan's cat loses $1\frac{1}{4}$ pounds. Then, the cat loses another $\frac{1}{8}$ pound. How many pounds total did Susan's cat lose? **7.3B**

- A $1\frac{1}{6}$
- B $1\frac{3}{8}$
- C $1\frac{1}{4}$
- D $1\frac{1}{8}$

11. The table shows the cost of four magazine subscriptions. **7.4B**

Magazine	Number of Issues	Cost of Subscription
Roller's Magazine	6	\$18.00
International Traveler	8	\$32.00
Telling Now	10	\$25.00
Greatest Adventures	12	\$36.00

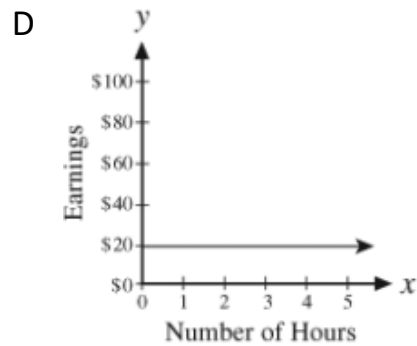
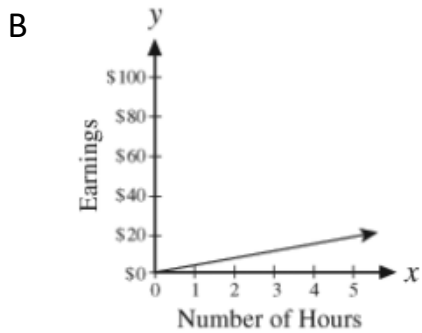
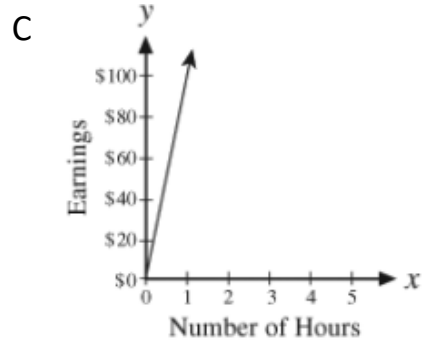
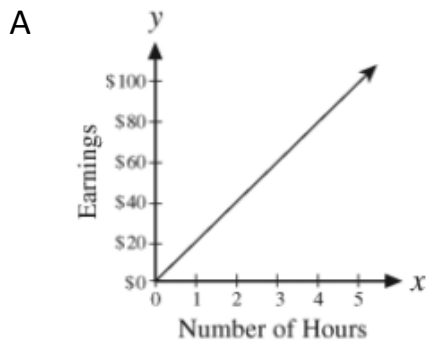
Which magazine costs the least per issue?

12. Which equation best represents the data in the table? **7.7A**

Miles Traveled (x)	4	6	9	13
Cost (y)	\$15	\$19	\$25	\$33

- A $y = 7x + 2$
- B $y = 3x + 3$
- C $y = 4x - 1$
- D $y = 2x + 7$

13. Each week, Phyllis earns \$20 per hour. Which graph expresses the relationship between Phyllis' hours worked and her corresponding earnings? 7.4A



14. Ms. Baker has $3\frac{1}{3}$ pounds of Halloween candy. She will put an equal amount of candy into 5 bowls. How many pounds of candy will be in each bowl? 7.3B

A $\frac{2}{3}$ pound

B $\frac{1}{3}$ pound

C $\frac{1}{4}$ pound

D 17 pounds

15. Dave spent \$86.28 at Golf Galaxy purchasing golf balls and tees. The total price of the golf tees was \$32.52. If Dave purchased 8 packages of golf balls, what is the cost of each package of golf balls? 7.3B

A \$6.72

B \$10.79

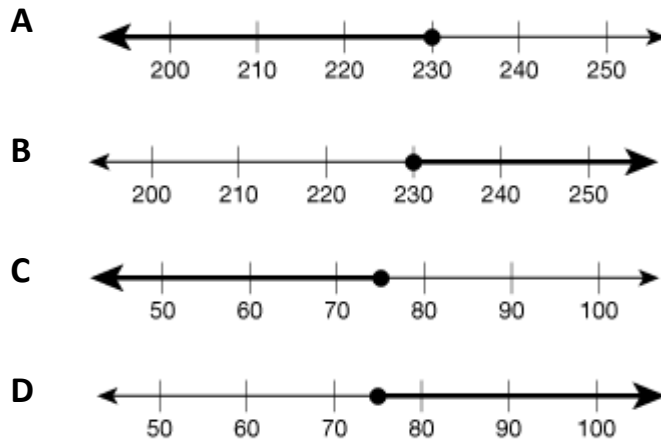
C \$53.76

D \$4.07

16. Glenn rents a car for a trip. The rental company charges a flat fee of \$35 plus \$0.50 per mile. Glenn has at most \$150 to spend on the rental car. 7.10B

$$35 + 0.5m \leq 150$$

Based on the inequality, which number line represents the number of miles m Glenn can drive the rental car?

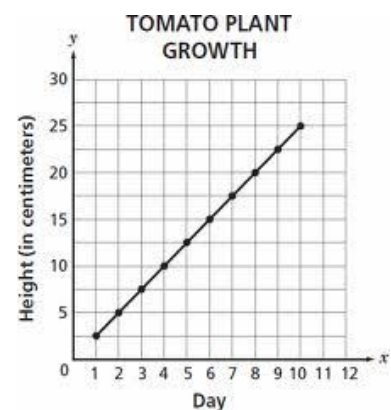


17. To install in a sprinkler system, the controller costs \$135 and the system costs \$2.50 per foot of pipeline. Which equation could be used to find the cost, c , of a system that requires f feet of pipeline? 7.11A

- A $c = 135f + 2.50$
 B $c = 135f - 2.50$
 C $c = 2.50f + 135$
 D $c = 2.50f - 135$

18. What is the rate of growth in centimeters for the tomato plant? 7.4A

- A 1 cm per day
 B 2.5 cm per day
 C 3 cm per day
 D 5 cm per day



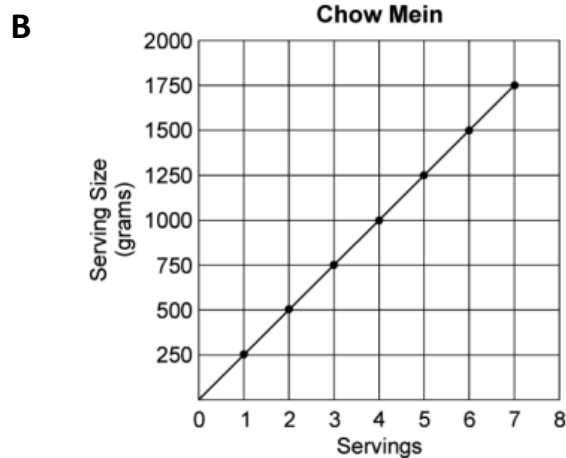
19. What is the solution to the inequality $-3x - 5 \geq 28$? 7.11A

- A $x \leq 11$
- B $x \leq -11$
- C $x \geq 33$
- D $x \geq -33$

20. A scientist had a bottle that contained 56.6 mL of a solution. She used 3.2 mL of the solution for an experiment. Then she poured half the solution remaining in the bottle into a beaker. Finally, she poured 6 mL of the solution remaining in the bottle into a test tube. How many milliliters of solution remained in the bottle? 7.3B

21. An order of chow mein at a local restaurant contains 250 grams per serving. Which representation shows the amount of grams per serving? 7.4A

- A $y = x + 250$, where x represents the servings and y represents the serving size in grams
- C 4 servings of chow mein contains a serving size of 500 grams



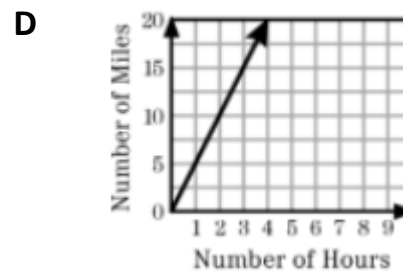
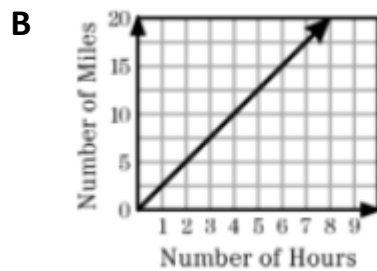
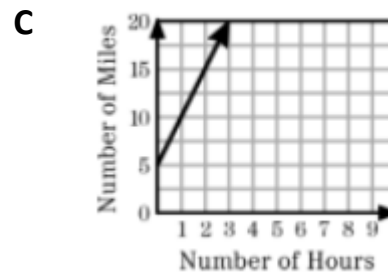
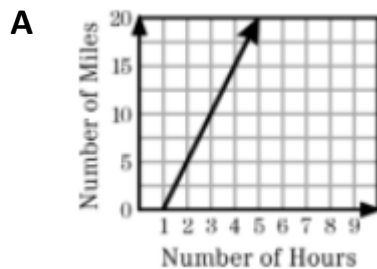
D

Servings	Serving Size (grams)
250	2
750	3
1,250	5
1,500	6

22. The table shows the relationship between x , the number of hours running, and y , the total number of miles ran. 7.11A

Number of hours (x)	Number of miles (y)
2	10
4	20
5	25

Which graph best represents the relationship between x and y shown in the table?



23. Which situation could be represented by the equation $3p + 20 = 65$? 7.10C
- A Teri buys 3 shirts that cost \$20 each. She also buys a hat for p dollars and spends a total of \$65.
 - B Teri buys 3 shirts that cost the same amount and uses a \$20-off coupon for a total of \$65.
 - C Teri buys 3 shirts that cost the same amount and a hat that costs \$20 for a total of \$65.
 - D Teri buys 20 shirts that cost \$3 each. She has a coupon for p dollars off and spends a total of \$65.

24. If the average low temperature for the month of December is -10°F and the average high for the same month is 40°F , what is the difference between the average low and the average high temperatures? **7.3B**
- A 10°F
 - B 40°F
 - C 30°F
 - D 50°F
25. Mert's Grocery has 4-pound packages of catfish fillets on sale for \$12.16. What is the constant of proportionality that relates the cost in dollars, d to pounds, p ? **7.4C**