TEAM MEMBER #1

Select the letter of the most appropriate answer and shade in the corresponding region on the answer sheet.

1) A flat rectangular piece of aluminum has a perimeter of 58 inches. The length is 7 inches longer than the width. Find the width.
A) 29 inches B) 11 inches C) 18 inches D) 25 inches

2) Find the amount of money in an account after 3 years if $4500 is deposited at 5% annual interest compounded semiannually.
A) $5209.31 B) $5223.40 C) $5218.62 D) $5226.63

3) An experienced accountant can balance the books twice as fast as a new accountant. Working together it takes the accountants 10 hours. How long would it take the experienced accountant working alone?
A) 20 hr B) 5 hr C) 25 hr D) 15 hr

4) Frank can type a report in 4 hours and James takes 5 hours. How long will it take the two of them typing together?
A) 20 hr B) $\frac{9}{20}$ hr C) 5 hr D) $\frac{20}{9}$ hr

5) Find the amount of money in an account after 6 years if $1600 is deposited at 8% annual interest compounded monthly.
A) $2539.00 B) $2581.60 C) $2573.50 D) $2561.65

6) Two cars leave a city and head in the same direction. After 5 hours, the faster car is 55 miles ahead of the slower car. The slower car has traveled 215 miles. Find the speeds of the two cars.
A) 32 mph and 43 mph B) 110 mph and 121 mph
C) 45 mph and 56 mph D) 43 mph and 54 mph

7) A carpet company charges $4.00 per square yard of carpet, plus $50 for labor. Let L and W denote the length and width of the carpet, given in feet. Give an expression for the cost, in dollars, to purchase and install carpet.
A) Total cost = $0.48(LW) + $50 B) Total cost = $0.40(LW) + $40
C) Total cost = $0.54(LW) + $50 D) Total cost = $0.44(LW) + $50

8) A twin-engined aircraft can fly 1260 miles from city A to city B in 5 hours with the wind and make the return trip in 7 hours against the wind. What is the speed of the wind?
A) 54 mph B) 18 mph C) 72 mph D) 36 mph

9) Inclusive of a 7.2% sales tax, a diamond ring sold for $2358.40. Find the price of the ring before the tax was added. (Round to the nearest cent, if necessary.)
A) $2528.20 B) $2188.60 C) $169.80 D) $2200

10) You are paid $8 for the first two hours and $35 for each additional hour and you work for more than two hours. Give an expression for your pay P for h hours.
A) P = 8 + 35(h - 2) B) P = 8 + 35(h - 1) C) P = 16 + 35h D) P = 16 + 35(h - 2)

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11) Find the amount of money in an account after 10 years if $4400 is deposited at 6% annual interest compounded annually.
A) $8005.35 B) $7879.73 C) $7946.89 D) $7981.68

12) The Family Fine Arts Center charges $23 per adult and $15 per senior citizen for its performances. On a recent weekend evening when 484 people paid admission, the total receipts were $8500. How many who paid were senior citizens?
A) 239 senior citizens B) 329 senior citizens C) 155 senior citizens D) 245 senior citizens

13) A bank teller has 52 $20 and $5 bills in her cash drawer. The value of the bills is $455. How many $20 bills are there?
A) 39 $20 bills B) 15 $20 bills C) 37 $20 bills D) 13 $20 bills

14) A volunteer wants to crochet beach hats and baby afghans for a church fund-raising bazaar. She needs 3 hours to make a hat and 4 hours to make an afghan and she has 12 hours available. Write an inequality that describes the situation and use the inequality to decide whether she can make 7 hats and 8 afghans in the time allowed. Let x represent the number of hats and y the number of afghans that she makes.
A) $3x + 4y \leq 12$; no B) $3x + 4y \leq 12$; yes C) $3x + 4y \geq 12$; yes D) $3x + 4y \geq 12$; no

15) The charge for renting a video is $2 plus $3 per day of renting. Give an expression for the cost C of renting a video for n days.
A) $C = 2n + 3n$ B) $C = 2 + 3n$ C) $C = 2n$ D) $C = 3n$

16) A volunteer wants to crochet beach hats and baby afghans for a church fund-raising bazaar. She needs 5 hours to make a hat and 2 hours to make an afghan and she has 10 hours available. Write an inequality that describes the situation and use the inequality to decide whether she can make 2 hats and 2 afghans in the time allowed. Let x represent the number of hats and y the number of afghans that she makes.
A) $5x + 2y \geq 10$; yes B) $5x + 2y \leq 10$; no C) $5x + 2y \geq 10$; no D) $5x + 2y \leq 10$; yes

17) A ball is thrown downward from a window in a tall building. Its position at time t in seconds is given by $s(t) = 16t^2 + 32t$, where s is in feet. How long will it take the ball to fall 168 ft?
A) 3.2 sec B) 5.8 sec C) 2.4 sec D) 2.2 sec

18) The length of a rectangular room is 6 feet longer than twice the width. If the room's perimeter is 180 feet, what are the room's dimensions?
A) Width = 28 ft; length = 62 ft B) Width = 33 ft; length = 72 ft
C) Width = 42 ft; length = 48 ft D) Width = 56 ft; length = 124 ft

19) When four times the number is added to 7 times , the result is 33. What is the number?
A) 4.7 B) 3 C) 1 D) -4.7

20) One number is 6 less than a second number. Twice the second number is 25 more than 3 times the first. Find the two numbers.
A) -13 and -7 B) -14 and -8 C) -12 and -6 D) 7 and 13

Select the letter of the most appropriate answer and shade in the corresponding region on the answer sheet.

21) Find the amount of money in an account after 9 years if $4100 is deposited at 5% annual interest compounded quarterly.
A) $6424.07 B) $6412.17 C) $6360.45 D) $6394.60

22) The sum of two numbers is 2. If one number is subtracted from the other, their difference is -14. Find the numbers.
A) -6, 8 B) -6, -8 C) 6, 8 D) 4, -2

23) The sum of the angles of a triangle is 180°. Find the three angles of the triangle if one angle is four times the smallest angle and the third angle is 24° greater than the smallest angle.
A) 10°, 34°, 136° B) 10°, 40°, 130° C) 17°, 68°, 95° D) 26°, 104°, 50°

24) Sergio's internet provider charges its customers $9 per month plus 4¢ per minute of on-line usage. Sergio received a bill from the provider covering a 3-month period and was charged a total of $61.40. How many minutes did he spend on-line during that period? (Round to the nearest whole minute, if necessary.)

A) The number of minutes is 86. B) The number of minutes is 860.
C) The number of minutes is 686. D) The number of minutes is 536.

25) The number of dogs and chickens on a farm add up to 9. The number of legs between them is 24. How many dogs and how many chickens are on the farm if there are at least twice as many chickens as dogs?
A) 6 dogs, 3 chickens B) 4 dogs, 5 chickens C) 3 dogs, 6 chickens D) 2 dogs, 7 chickens

26) A train ticket in a certain city is $2.50. People who use the train also have the option of purchasing a frequent rider pass for $18.00 each month. With the pass, each ticket costs only $1.75. Determine the number of times in a month the train must be used so that the total monthly cost without the pass is the same as the total monthly cost with the pass.
A) 26 times B) 23 times C) 25 times D) 24 times

27) After a 17% price reduction, a boat sold for $27,390. What was the boat's price before the reduction? (Round to the nearest cent, if necessary.)
A) $4656.30 B) $161,117.65 C) $33,000 D) $32,046.30

28) Julie and Eric row their boat (at a constant speed) 32 miles downstream for 4 hours, helped by the current. Rowing at the same rate, the trip back against the current takes 8 hours. Find the rate of the current.
A) 2 mph B) 6 mph C) 3 mph D) 1.5 mph

29) A moving firm charges a flat fee of $35 plus $30 per hour. Find the cost C(x) of using the moving firm for x hours.
A) C(x) = 35x + 30 B) C(x) = 35x - 30 C) C(x) = 30x - 35 D) C(x) = 30x + 35

30) The sum of two numbers is 4. If one number is subtracted from the other, their difference is -12. Find the numbers.
A) 4, 8 B) -4, 8 C) 1, 3 D) -4, -8

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31) A car rental agency charges $250 per week plus $0.25 per mile to rent a car. How many miles can you travel in one week for $300?
A) 325 miles B) 175 miles C) 200 miles D) 1200 miles

32) When a number is decreased by 60% of itself, the result is 144. What is the number?
A) 600 B) 216 C) 17 D) 360

33) Martha can rake the leaves in her yard in 6 hours. Her younger brother can do the job in 7 hours. How long will it take them to do the job if they work together?
A) $\frac{42}{13}$ hr B) 42 hr C) 7 hr D) $\frac{13}{42}$ hr

34) A pet shop has a total of 20 dogs and birds. Altogether there are 56 feet. How many dogs are there and how many birds?
A) 7 dogs and 13 birds B) 8 dogs and 12 birds
C) 9 dogs and 11 birds D) 10 dogs and 10 birds

35) Tonya is thinking of a number, which if you multiply it by 6 and subtract 11, ends with a result of 103.
A) 552 B) 114 C) 19 D) 607

36) One maid can clean the house three times faster than another. Working together they can clean the entire house in 3 hours. How long would it take the faster maid cleaning alone?
A) 3 hr B) $\frac{3}{4}$ hr C) 5 hr D) 4 hr

37) When 20% of a number is added to the number, the result is 60. What is the number?
A) 10 B) 17 C) 120 D) 50

38) An auto repair shop charged a customer $303 to repair a car. The bill listed $93 for parts and the remainder for labor. If the cost of labor is $35 per hour, how many hours of labor did it take to repair the car?
A) 6.5 hours B) 6 hours C) 5 hours D) 7 hours

39) Jason is thinking of a number, which if you multiply it by 12 and add 21, ends with a result of 69.
A) 849 B) 4 C) 1080 D) 36

40) There are 16 more sophomores than juniors in an 8 AM algebra class. If there are 54 students in this class, find the number of sophomores and the number of juniors in the class.
A) 35 sophomores; 19 juniors B) 54 sophomores; 38 juniors
C) 70 sophomores; 38 juniors D) 19 sophomores; 35 juniors