Hayden Middle School Math Tournament

5th Grade 2018

1. Daisy is making cookies. She needs to bake a total of 504 cookies. She has been baking for 3 ½ hours and has baked 336 cookies. If each pan holds 24 cookies, how long will it take her to finish baking the 504 cookies?

   A: 2 hours B: 1 ¾ hours C: 3 ½ hours D: 2 ½ hours

2. Evaluate: $5^3 + 2[(4500 \div 10^3) - 35.2]$

   A: 94.4 B: 954.6 C: 45.7 D: 63.6

3. Bentley is making apple juice. Each gallon of apple juice uses 2/3 of a basket of apples. How many baskets of apples will he use to make 5 1/2 gallons of apple juice.

   A: 5 baskets B: 3 ⅓ baskets C: 2 ½ baskets D: 3 ⅔ baskets

4. What is the opposite of the multiplicative inverse of the reciprocal of 6/9?

   A: $-\frac{9}{6}$ B: $\frac{9}{6}$ C: $-\frac{6}{9}$ D: $\frac{6}{9}$

5. The total weight of 9 puppies is 23.25. If the smallest puppy weighs $2\frac{1}{4}$ pounds, and all others weigh the same, what is the weight of the each of the puppies?

   A: 2.5 pounds B: 2.25 pounds C: 2.625 pounds D: 3.25 pounds

6. Write 0.058 as a fraction is simplest form.

   A: $\frac{29}{500}$ B: $\frac{7}{12}$ C: $\frac{58}{100}$ D: $\frac{29}{100}$

7. What is the sum of the GCF and LCM of 54 and 16

   A: 512 B: 432 C:864 D: 434

Hayden Middle School Math Tournament

5th Grade 2018

8. Triangle ABC is reflected across the Y-axis then translated up 5 units. What are the new coordinates of the point C if the original coordinates are A: (5,2.5) B: (9,10) and C: (9,-5.5).

   A: (-9, 5.5) B: (-9, -0.5) C: (-9, 0.5) D: (10, 0.5)

9. Janet's birthday is Monday, January 22. If this is 45 days away from tomorrow, what day of the week was yesterday?

   A: Monday B: Tuesday C: Wednesday D: Thursday

10. Solve for x. $x + 4 - 5x + 24 = 48$

    A: 5 B: -2 C: 5.4 D: -5

11. What is the sum of the 6th term and the 15th term in the sequence below.

    0,1,1,2,3, __,8,13,...

    A: 382 B: 400 C: 377 D: 405

12. Snowflakes are falling as a rate of 250 snowflakes per minute. John's deck has an area of 144 square feet. How many ways can he arrange the letters in the word SNOW DAY?

    A: 5040 B: 840 C: 1080 D:9872

13. Sarah's son will be nineteen on Saturday. If Sarah just turned 53, how old was Sarah when her son was born?

    A: 32 B: 34 C: 35 D:31

14. The sum of 3 consecutive numbers is 42. What is the middle number?

    A: 13 B: 20 C: 14 D: 19

15. Jemison is making punch. She has enough punch to serve 128 guests. How many gallons of punch has she made if each serving is 6 ounces?

    A:768 gallons B: 6 gallons C: 116 gallons D: 128 gallons

16. What is the perimeter in inches of a square with an area of 16 square feet?

    A: 192 inches B: 48 inches C: 16 inches D:136 inches

Hayden Middle School Math Tournament

5th Grade 2018

17. Jan lives on the 12th floor of her apartment building. She takes the stairs each morning to her friend's apartment on the 3rd floor then they catch the elevator together. If each flight of stairs has 28 steps, how many total steps does she go down each day?
    A: 84 B: 336 C: 504 D: 252

18. John and Eli are saving money. Eli decides to save a quarter each day. John decides to save start by saving a dime on day one. If John doubles the previous day's amount each day, how much will the boys save in eleven days?
    A: John B: $2.56 C: $105.15 D: $102.40

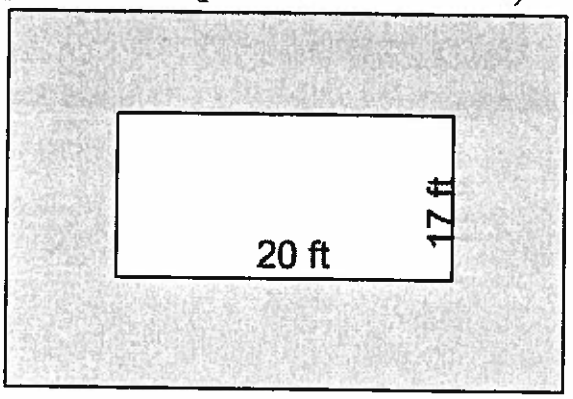
19. Find the positive difference between fifteen and twenty three hundredths and thirty and fourteen thousandths.
    A: -14.91 B: 14.91 C: 14.784 D: -147.784

20. The number 21,520 is divisible by which numbers?
    A: 2,6,9,5,10 B: 3,9,10,2,5 C: 2,4,5,10 D: 2,3,5,6,10

21. Emma has 2/3 of ½ of 5 gallons of applesauce. How many gallons of applesauce does she have?
    A: 5 gallons B: 1 ⅔ gallons C: 3 ⅓ gallons D: 2 ½ gallons

22. Evaluate the following if x=12 $5.5x + 2(3 - 2x)$
    A: 24 B: 44.5 C: 120 D: 108

23. If the width of the sidewalk is 5¾ ft, what is the area of the sidewalk (shaded area) in the picture below? (picture not drawn to scale)

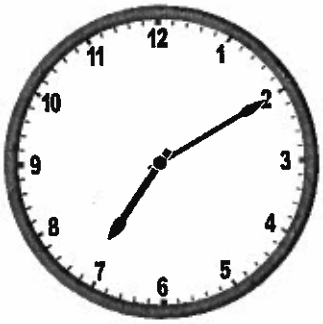


A: 557¾ square feet B: 528 square feet
C: 340 square feet D: 897¾ square feet

Hayden Middle School Math Tournament

5th Grade 2018

24. What is measurement of the angle made by the hands on a clock at 7:10?



A: 150 degrees B: 115 degrees C: 120 degrees D: 155 degrees

25. Ann has 5 blue shirts, 4 printed shirts, 3 red shirts, and 6 white shirts in her closet. She has 5 pairs of blue jeans, 3 pairs of black pants, 3 skirts and 4 pairs of red pants. How many outfits can she make if she only wears her printed shirts with her black pants?

A: 222 B:162 C: 5760 D: 180

Tie Breaker 1: Kyle runs 4 miles in 28 minutes and 32 seconds. If his pace remains constant, how many seconds does it take him to run two and a half miles?

Tie Breaker 2: If a☺b = $a^2 - 2ab + 5$ find (4☺2) ☺-5

Tie Breaker 3: Jillian is taller than Sue but shorter than Talin and Mark. Malik is shorter than Mark but taller than Jillian. Emily is shorter than Sue. Who is the shortest?

TB1 5749.82m.3

TB2 2.828

TB3 8

5TH GRADE
2018

1. A
2. D
3. D
4. C
5. C
6. A
7. D
8. B
9. B or C
10. D
11. A
12. A
13. C
14. C
15. B
16. A
17. D
18. C or E
19. C
20. C
21. B
22. A
23. A
24. D
25. D

Tie Breaker 1	1070
Tie Breaker 2	80
Tie Breaker 3	Emily

HAYDEN MIDDLE SCHOOL MATH TOURNAMENT
6TH GRADE
FEBRUARY 10, 2018

1. Evaluate the expression is y = 2 and x = -¾

$$2y^3 + 2\left[10x + (4 + y^2)\right] - 5x$$

A: 72 ¼ B:20 ¾ C: 79 ¾ D:186 ¼

2. If Ethan makes the following scores on his English tests, what is the mean of the median and the mode?

$\{74, 63, 85, 92, 78, 85, 94, 72\}$

A: 20.8125 B:81.5 C: 80.375 D: 83.25

3. Mr. Felsom just returned from his trip to Disney World. He spent $406.25 on his trip that used a total of 162.5 gallons of gas. He is now traveling to his cousins house. If the average cost of fuel is the same, how much will he spend on gas if he uses 125 gallons of gas? (Round to the nearest cent if needed)

A: $312.50 B: $3.25 C: $528.13 D: $125.00

4. In terms of π, what is the area of a circle whose circumference is 9π.

A: 81 π B: 8.1 π C: 20.25 π D: 202.5 π

5. Sam paid 8% tax on his bill of $27.50. How much tax did he pay?

A: $0.28 B: $0.08 C: $2.20 D: $28.90

6. Garrett began his hike at an elevation of 495 feet. Along his hike he passed through 3 stages where the elevation changes by 125 feet, -265 feet, and -32 feet. What elevation does he end his hike at?

A: 603 feet B: 323 feet C: 917 feet D: 387 feet

7. Simplify: $4x^5 \cdot 8x^4$

A: $32x^{20}$ B: $32x$ C: $32x^9$ D: $16x^{18}$

8. If 24 is added to two fourths of a number, the result is 3 times the number. What is the number?

A: 90 B: 9.6 C:12.85 D:90.6

9. During the championship game the Wildcats scored 5 times for a total of 23 points including field goals and touchdowns. Assuming all extra points were good, touchdowns are worth 7 points and field goals are worth 3 points. The kicker made 60% of his field goal attempts. How many field goals did he miss?

A: 2 B: 3 C: 4 D: 5

10. James is rolling two 6-sided fair dice. What is the probability that he will roll a sum of 10?

A: $\frac{3}{4}$ B: $\frac{1}{6}$ C: $\frac{1}{8}$ D: $\frac{3}{24}$

11. Allen is planting corn in his garden. He spends 50 minutes planting 4 rows of corn. If this information is graphed, what is the slope of the line if the if the y-axis represents the time spent?

A: $\frac{49}{7}$ B: $\frac{-12}{1}$ C: $\frac{1}{12}$ D: $\frac{25}{2}$

12. Write in slope intercept: $2x + 9y - 2 = y + 8x + 22$

A: $y = -\frac{2}{3}x + 3$ B: $y = \frac{3}{4}x + \frac{20}{22}$ C: $y = \frac{3}{4}x + 3$ D: $y = \frac{2}{3}x + 3$

13. Gabe has 3 dinglehoppers. One whatchamacallit is worth 6 thingamajigs and a thingamajig is worth 2 dinglehoppers. How many whatchamacallits is three dinglehoppers?

A:1/4 B: 4 C: 12 D: 1/12

14. The average ages of 3 siblings is 7. None of the siblings are the same age. The oldest sibling is 4 years older than the middle sibling. The youngest sibling is ½ the age of the oldest. What is the age of the youngest sibling?

A:10 B: 5 C:4 D: 6

15. Simplify:

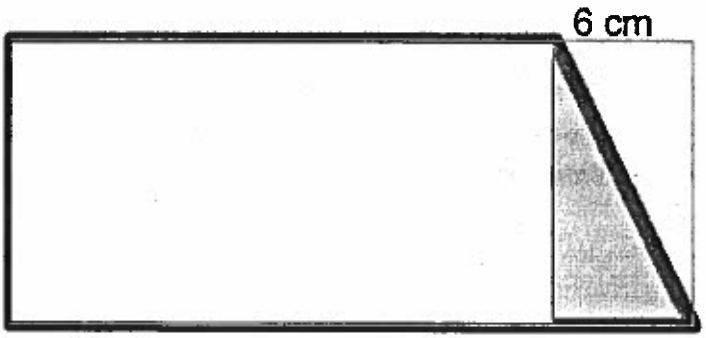
$$81 \div 9 + 2\{9 - 4^0[18 + (3 \cdot 4)] \cdot 4\}$$

A: 1 B: -168 C: -213 D: -102

16. Jenny is traveling to her friend's house for the weekend. She used 13.2 gallons of gas to travel 165 miles. At this rate, how many gallons of gas will she use to drive 281.25 miles?

A: 2178 gallons B: 22.5 gallons C: 13.2 gallons D: 8.8 gallons

17. What is the perimeter of the trapezoid below if the area of the white rectangle is 160 cm^2 and the area of the shaded triangle is 24 cm^2.



A: 64 cm B: 8 cm C: 10 cm D: 68 cm

18. Write an equation for a line with a slope of -3 that passes through (2,4).

A: $y = -3x + 10$ B: $y = -3x - 4$
C: $y = 4x + 10$ D: $y = -3x - 10$

19.Simplify: $\frac{\frac{1}{2}x - 2(3x + y)}{5}$ if x=5y

A: 5.9y B: 7.625 + y C: -5.9y D: 5.7 - y

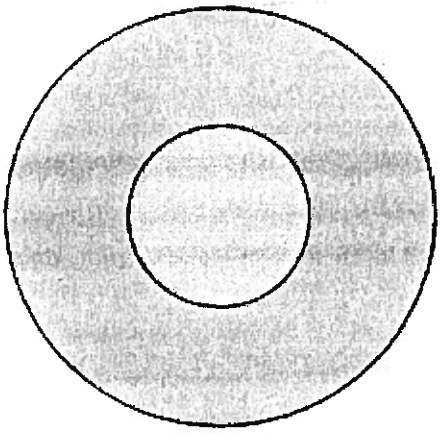
20. Julie is training for a run. She plans to run each day this week. She runs 1.25 miles on the first day. She intends to increase her daily amounts by adding four tenths of day one's distance to each previous day's distance. If she does this each day, how many miles will she run in a seven day week?

A: 5 miles B: 13.25miles C: 4.25 miles D: 19.25 miles

21. Graham purchased a new car for $24,175.00. A year later the same car prices for $27,076.00. What is the percent of increase on the price of the car?

A:29.01 % B:12 % C: 11% D:15%

22. The ratio of the circumference of the outside circle to the inside circle is 5:2. If the radius of the inside circle is 4 inches, what is the circumference of the outside circle in terms of π?



A: 10 inches B: 8 inches C: 20 inches D: 9 inches

23. There are 8 red roses and 7 pink roses in a vase. Graham is randomly taking two roses out of the vase without replacement. What are the chances he will choose a pink rose after choosing a red rose?

A: $\frac{16}{45}$ B: $\frac{4}{15}$ C: $\frac{56}{225}$ D: $\frac{14}{15}$

24. Uncle Jim has 33 total coins. He only has quarters, dimes, and nickels. The value of the coins is $3.75. He has twice as many nickels as he does quarters. If he has ⅓ as many dimes as he has nickels, how many dimes does he have?

A: 9 B: 10 C: 6 D: 5

25. Victor has 9 pets. He has four birds, one spider, one fish, and three dogs. His neighbor owns a farm. How many cows would his neighbor have to buy to have the same amount of legs as Victor's 9 pets?

A: 28 B: 7 C:36 D: 8

Tiebreaker 1: What solution for x and y satisfies the system of equations?

$$5x + 2y = 41 \text{ and } 3x + 2y = 27$$

Tiebreaker 2: Ginny has 3 pink tops, 4 blue tops, and 7 black tops. She has 5 black pants, 4 pairs of blue jeans, and 2 pair of red pants. How many outfits can she have if she cannot wear her black tops with her black pants?

Tiebreaker 3: Ellen is covering her bulletin board display with fabric and a ribbon border. The current bulletin board is 72 centimeters by 18 centimeters. She wants to make this into a square and use the same amount of fabric for the display. How much ribbon will she need?

6TH Grade
2018

1. B
2. D
3. A
4. C
5. C
6. B
7. A
8. B
9. A
10. C
11. D
12. C
13. A
14. B
15. C
16. B
17. A
18. A
19. C
20. D
21. B
22. C
23. B
24. C
25. B

TB 1	(7,3)
TB 2	119
TB 3	14.4

Hayden Middle School
Pre-Algebra
February 10, 2018

1. Simplify the expression:

$$\left\{\frac{2x^2 3y^3}{z^2}\right\}^4$$

A. $\frac{8x^2 12y^3}{4z^2}$ B. $\frac{16x^6 81y^7}{z^6}$ C. $\frac{8x^8 12y^{12}}{4z^8}$ D. $\frac{16x^8 81y^{12}}{z^8}$

2. What is the circumference of a circle if the area of the circle is 144π?

A. 12π B. 24π C. 36π D. 48π

3. In how many ways can the letters in MINNIE be arranged?

A. 180 B.780 C. 360 D. 90

4. Eight times a number increased by 6 is 12 less than the product of the opposite of the number and 4. What is the number?

A. $\frac{3}{2}$ B. $-\frac{9}{2}$ C. $-\frac{1}{2}$ D. $-\frac{3}{2}$

5. Solve for x: $\frac{1}{4} > 1 + \frac{x}{2}$

A. $x > -1\frac{1}{2}$ B. $x < -1\frac{1}{2}$ C. $x > 1\frac{1}{2}$ D. $x < 1\frac{1}{2}$

6. Circle K has it's center at the point (2, 6) and the endpoints of the diameter are (2, 12) and (2, 0). What is the area of the circle in terms of π?

A. 6π B. 12π C. 36π D. 144π

7. If $f(x) = x^2 - 4x + 8$, and $g(x) = 2x^2 - 4x + 6$ find g(f(2)).

A. 24 B.22 C. 278 D.6

Hayden Middle School
Pre-Algebra
February 10, 2018

8. The sum of the ages of the Johnson brothers are 42. Their ages can be represented as three consecutive integers. What is the age of the oldest brother?

A. 13 B. 14 C. 15 D. 16

9. Emily has $54. She wants to buy a sweater that costs $28 and two CDs. What is the most she can spend on each CD assuming she buys 2 CDs at the same price?

A. $13 B. $14 C. $26 D. $27

10. To encourage new customers, a new movie theater is offering different ways to pay for a movie: After how many movies does it become cheaper to become a member?

Members: $75 a year plus $2 per movie Non-members: $5.75 to see a movie

A. 21 B. 20 C. 27 D. Never

11. Old Mc Donald has a farm. He has a certain number of cows and chickens. He does a head count and finds out there are 75 heads. Then he counts the feet of the animals and comes up with 224 feet. How many chickens does he have?

A. 37 B. 38 C. 76 D.74

12. Find all zeros of $f(x) = 8x^2 + 16x + 6$.

A. $-\frac{3}{2}$ and $-\frac{1}{2}$ B. $\frac{3}{2}$ and $\frac{1}{2}$ C. 12 and 4 D. -4 and -12

13. The equation of a line is $2x - 4y = 16$. What is the slope of a line perpendicular to the line?

A. $\frac{1}{2}$ B. $-\frac{1}{2}$ C. -2 D. 2

14. Simplify: $\frac{12!5!}{10!4!}$

A. 60 B.660 C.600 D.6660

Hayden Middle School
Pre-Algebra
February 10, 2018

15. Find the product:

$\frac{a^2b^{-2}c^3}{cx^{-2}} \cdot \frac{y^4x^3}{a^{-1}c^{-2}}$

A. $\frac{a^3c^4y^4x^5}{b^3}$ B. $\frac{a^2c^3y^4x^6}{b^2}$ C. $\frac{ac^2xy\text{^}4}{b^3}$ D. $a^3c^4y^4x^5$

16. A regular heptagon measures 5x+3 units on each side. What is the perimeter in simplest form?

A. 12x+10 units B. 35x+3 units C. 35x+21 units D. 56x

17. The sum of the lengths of the edges of a cube is 60 inches. What is the volume of the cube?

A. 216 $inches^3$ B.5 $inches^3$ C. 6 $inches^3$ D.125 $inches^3$

18. A penny is tossed, a quarter is tossed, and then one card is drawn from a standard deck. What is the probability that "Tail, Tail, Heart" is the result.

A. $\frac{1}{16}$ B. $\frac{1}{4}$ C. $\frac{5}{4}$ D. $\frac{13}{208}$

19. The bottom of a cylindrical ice cream container has an area 38.465 square inches. The height of the container is twice as big as the diameter. What is the volume of the container? (Use 3.14 as π)

A. 38.51 B. 3.5 C. 7 D. 1225

20. Which equation represents a line that passes through the point (2,-4) and is parallel to a line that has a slope of ½?

A. $y = 2x - 5$ B. $y = -2x - 5$ C. $y = -\frac{1}{2}x - 5$ D. $y = \frac{1}{2}x - 5$

21. 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

A. 65 B. 54 C. 56.3 D. 55

Hayden Middle School
Pre-Algebra
February 10, 2018

22. $B = \frac{5(A-6)}{4}$. Solve for A.

A. $\frac{4B+30}{5}$ B. $\frac{4B+6}{5}$ C. $\frac{4B-30}{5}$ D. $\frac{4B-6}{5}$

23. There are x chickens and y cows on a farm. The expression 3x+6y represents the total number of their legs. Which expression also represents the total number of their legs?

A. 9xy B. 3(2y+2x) C. $6(\frac{1}{2}x + y)$ D. 2(2y+3x)

24. Dylan has $1.90. He has 10 coins, all dimes and quarters. How many dimes and quarters does he have?

A. 6 quarters and 4 dimes B. 4 quarters and 6 dimes

C. 7 quarters and 3 dimes D. 3 quarters and 7 dimes

25. The diameter of a circle is 8 inches. What is the area of a 90° sector?

A. 16π B. 4π C. 8π D. 32π

Tie Breakers:

1. Solve: $f(x) = -5x^2 + 5x + 3$
2. Simplify: $\left(\frac{2}{x-1} \div \frac{1}{x+1}\right) - \frac{x-1}{5x}$
3. Expand the following: $(s - 4v)^5$