

NAME _____

SCHOOL _____

2009 Middle School Math Festival**Individual Round: Glencoe Course 2**

1. Order the measurements from least to greatest: 2,720 mL, 24.91 L, 0.0268 kL

A. 2,720 mL, 24.91 L, 0.0268 kL

C. 2,720 mL, 0.0268 kL, 24.91 L

B. 24.91 L, 0.0268 kL, 2,720 mL

D. 0.0268 kL, 24.91 L, 2,720 mL

2. Evaluate $\frac{wx}{p} + \frac{p}{x}$ for $w = 4.5$, $x = 0.6$, and $p = 1.5$.

A. 2

B. 2.2

C. 4.7

D. 4.3

3. Solve for n : $\frac{n + 4}{5} = 8$

A. 44

B. 20

C. 36

D. 60

4. Solve the inequality: $-2z + 5 \leq 35$.

A. $z \leq -15$ B. $z \geq -15$ C. $z \geq -20$ D. $z \leq -23$

5. Evaluate $(c - b)^2 + a^2$ for $a = -5$, $b = -2$, and $c = -4$.

A. 21

B. 61

C. -29

D. 29

6. A number is between 850 and 900. The number is divisible by 9 and has a units digit of 1. What is the number?

A. 801

B. 891

C. 851

D. 871

7. Evaluate $\frac{x^2 - y}{a + 2b}$ for $a = 2$, $b = 3$, $x = 5$, and $y = 4$. Write in simplest form.

A. $1\frac{1}{8}$

B. 3

C. $\frac{3}{4}$ D. $2\frac{5}{8}$

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8. Find the sum: $\frac{1}{6} + \frac{3}{8} + \frac{3}{4}$

A. $\frac{7}{8}$

B. $1\frac{7}{24}$

C. $1\frac{3}{8}$

D. $\frac{5}{12}$

9. Find the perimeter of a rectangle with length of $\frac{2}{11}$ and width of $\frac{1}{4}$.

A. $\frac{19}{44}$

B. $\frac{19}{22}$

C. $\frac{1}{5}$

D. $\frac{2}{5}$

10. Evaluate $a - b + c$ for $a = 4\frac{1}{5}$, $b = 2\frac{7}{20}$, and $c = 3\frac{1}{4}$.

A. $5\frac{1}{10}$

B. $5\frac{2}{5}$

C. $9\frac{4}{5}$

D. $2\frac{1}{10}$

11. A school band has a brass section of trumpet, trombone, and tuba players. There are twice as many trombones as tubas and half as many trombones as trumpets. There are two more trombones than tubas in the band. What is the total number of players in the brass section?

A. 8

B. 12

C. 10

D. 14

12. In a survey, three out of seven people named blue as their favorite color. One out of six named red. If 1,092 people were included in the survey, how many named neither blue nor red as their favorite color?

A. 650 people

B. 468 people

C. 442 people

D. 806 people

13. Pentagon $ABCDE \sim$ Pentagon $FGHIJ$. Find BC for $GH = 12$, $IJ = 15$, and $DE = 10$.

A. 10

B. 8

C. 18

D. 12.5

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14. Find 0.8% of \$75,000.

- A. \$60,000.00 B. \$9,375.00 C. \$600.00 D. \$937.50

15. A recent poll in your state shows that 25% of the vehicles are SUVs and 10% are trucks. The poll counted 5 million SUVs. How many vehicles were neither trucks nor SUVs?

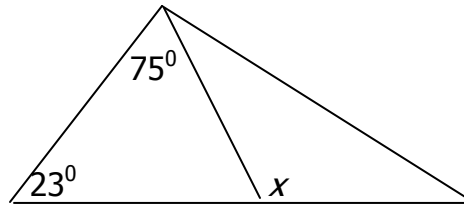
- A. 7,000,000 B. 1,750,000 C. 325,000 D. 3,250,000

16. A music store charges \$18.50 for a CD plus a 0.5% city tax and a 4% state tax. How many more tax dollars does the state collect than the city? Round to the nearest cent.

- A. \$0.74 B. \$0.65 C. \$0.08 D. \$0.09

17. Find the value of x .

- A. 75° C. 82°
B. 23° D. 98°



18. What is the area of a right triangle with a hypotenuse of 82 cm and two legs of 18 cm and 80 cm?

- A. 720 cm^2 B. 180 cm^2 C. 1440 cm^2 D. 3362 cm^2

19. The town of Dunlap is 39 miles south of the town of Ferris and 52 miles west of the town of Butte. How much shorter is the distance when traveling directly from Ferris to Butte than it is to travel from Ferris to Dunlap and then to Butte?

- A. 91 miles B. 65 miles C. 52 miles D. 26 miles

20. A circular hot tub (diameter = 5.6 meters) has a concentric circular deck which is 2.1 meters wide. What is the area of the deck, in terms of π ?

- A. $7.76\pi \text{ m}^2$ B. $16.17\pi \text{ m}^2$ C. $27.93\pi \text{ m}^2$ D. $51.54\pi \text{ m}^2$

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21. Of 48 job applicants, the manager chose 22 to interview. What percentage of the applicants got interviews? Round to the nearest per cent.

- A. 45% B. 46% C. 48% D. 40%

22. Find the coordinates of the image of point $R(-1, 3)$ rotated 90° clockwise about the origin.

- A. $(-3, -1)$ B. $(-1, 3)$ C. $(3, 1)$ D. $(1, 3)$

23. A scale drawing ($1 \text{ cm} = 6.5 \text{ m}$) of a regular pentagon has each side of length 1.9 cm. What is the perimeter of the actual pentagon?

- A. 12.35 m B. 52.25 m C. 61.75 m D. 42 cm

24. A 6-sided die is tossed x times. How many different outcomes are possible?

- A. $6x$ B. 6^x C. x^6 D. $36x$

25. Suppose you have a bag containing 24 marbles. If the probability of drawing a red marble is twice as likely as *not* drawing a red marble, how many red marbles are in the bag?

- A. 16 B. 12 C. 18 D. 2

26. A bowl has slips of paper with numbers from 2 to 14, with no numbers repeated. What are the odds against picking a prime number?

- A. 7 to 6 B. 6 to 7 C. 7 to 13 D. 6 to 13

27. During one team's season, the ratio of games won to games played was 2 to 9. The team played 45 games. How many games did the team win?

- A. 13 games B. 18 games C. 22 games D. 10 games

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28. A DVD store charges \$3.20 for each day, d , but gives a \$1.00 rebate if the DVD is returned before 5 days. Write a rule to represent the rental charges, C .

- A. if $d \leq 5$ then $C = 3.20d$; if $d > 5$ then $C = 3.20d - 1$
- B. if $d \leq 5$ then $C = 3.20d$; if $d > 5$ then $C = 3.20d + 1$
- C. if $d \geq 5$ then $C = 3.20d$; if $d < 5$ then $C = 3.20d - 1$
- D. $C = 3.20d$

29. The table at the right is a survey given to shoppers asking which type of soda they preferred. What is the probability that 1 shopper, selected at random, would prefer neither Soda A nor Soda B.

Soda	A	B	C	D	E
Numbers Preferred	10	15	9	11	7

- A. $\frac{21}{26}$
- B. $\frac{25}{27}$
- C. $\frac{25}{52}$
- D. $\frac{27}{52}$

30. Refer to the figure below. Surveyors know that $\triangle PQR \sim \triangle STR$. What is PQ , the distance across the lake (shaded)?

- A. 3.65 km
- B. 3.15 km
- C. 2.89 km
- D. 3.29 km

