Franklin Math Bowl – Seventh Grade Test – 2006

1. A jar contains 11 purple, 15 pink, and 9 gray marbles. A marble is drawn at random. What is the probability that the marble drawn is pink?

(A) 15 (B) $\frac{3}{7}$ (C) $\frac{11}{35}$ (D) $\frac{3}{4}$

2. Evaluate $\frac{(3 \times 7 + 3) \div 3}{2^2}$

(A) 2 (B) 3 (C) 2^2 (D) $1\frac{3}{4}$

3. 35 is 70% of what number?

(A) 55 (B) 24.5 (C) 45 (D) 50

4. What is the area of a square with perimeter 92 mm?

(A) 500 mm^2 (B) 412 mm^2 (C) 529 mm^2 (D) 489 mm^2

5. Find the prime factorization for 375.

(A) $5 \times 25 \times 3$ (B) 3×5^3 (C) $3 \times 5 \times 7$ (D) 5×75

6. Brian's pumpkin patch last year was a rectangle that measured forty-nine meters long by twenty-one meters wide. This year he increased the area of the pumpkin patch by increasing the length but not the width. He increased the area of the patch by 546 square meters. What is the length of the expanded pumpkin patch?

(A) 75 m (B) 72 m (C) 79 m (D) 70 m

7. Lauren decided to take a bicycle trip from New York to Pittsburgh. After biking 154 miles, which was $\frac{2}{5}$ of the distance, her bicycle broke down. How far is it from New York to Pittsburgh?

(A) 60 miles (B) 385 miles (C) 540 miles (D) 308 miles

8. Solve: $309 = 27x - 42$

(A) 12 (B) 15 (C) 9 (D) 13

9. When six is subtracted from the product of three and a number, the difference is twelve. Find the number.

(A) 6 (B) 9 (C) 7 (D) 12

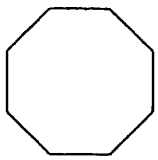
10. Write .0147 in scientific notation.

(A) 1.47×10^2 (B) 1.47×10^{-2} (C) $.0147 \times 10^4$ (D) 147×10^{-4}

11. You can bake 3 cakes using 1 ½ dozen eggs. What is the average number of eggs per cake?

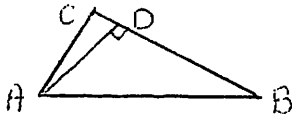
(A) 3 (B) 18 (C) 4 ½ (D) 6

12. State the correct name for the pictured polygon.



(A) hexagon (B) octagon (C) pentagon (D) decagon

13. The area of a triangle is 15 cm^2. It is given that BC = 5 cm while AB = 7 cm. A perpendicular is drawn from A to $\overline{BC}$, which intersects $\overline{BC}$ at D. Calculate BD.

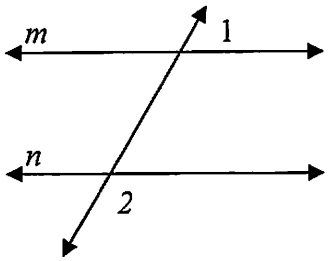


(A) 4 cm (B) $\sqrt{13}$ cm (C) $\sqrt{5}$ cm (D) $\sqrt{12}$ cm

14. Find the slope of the line going through (-5, 2) and (4, -9).

(A) $-\frac{11}{9}$ (B) -7 (C) $-\frac{9}{11}$ (D) $\frac{7}{9}$

15. $m \parallel n$ If $\mathbf{m}\angle\mathbf{1} = 52°$, what is the $\mathbf{m}\angle\mathbf{2}$?



(A) 128° (B) 52° (C) 38° (D) 110°

16. $4\frac{3}{5} \times 1\frac{4}{9} =$

(A) $4\frac{12}{45}$ (B) $4\frac{20}{27}$ (C) $2\frac{8}{65}$ (D) $6\frac{29}{45}$

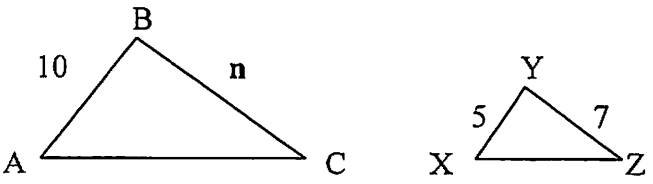
17. 90 mm = ____ m

(A) 9 (B) 9000 (C) 0.09 (D) 0.9

18. Solve. $\frac{x}{6} = 12$

(A) 72 (B) 2 (C) 36 (D) 6

19. $\Delta\mathbf{ABC}$ and $\Delta\mathbf{XYZ}$ are similar triangles. Find **n**.



(A) 14 (B) 12 (C) 2 (D) not enough information

20. On the highway, a car used 31.8 L of gasoline to travel 445.2 km. Approximately how far did the car travel on each liter of gasoline?

(A) 12.4 km (B) 14 km (C) 13 km (D) 15.2 km

21. Find the median for the following set of numbers: 130, 86, 92, 110, 88, and 98.

(A) 92 (B) 95 (C) 6 (D) 101

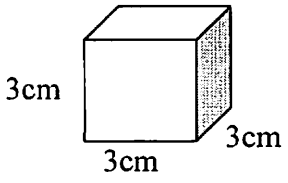
22. Evaluate $\mathbf{r - s + t}$ if r = -5, s = -4, and t = 3.

(A) 2 (B) 4 (C) -6 (D) -2

23. Which ordered pair is a solution for $7x - 2y = 8$?

(A) (1,1) (B) (2,3) (C) (0,4) (D) (4,3)

24. Find the surface area of the cube.



(A) 54 cm^2 (B) 27 cm^2 (C) 36 cm^2 (D) 9 cm^2

25. You are presented with a gold plated hula-hoop. The presenter tells you that it is worth \$53.72 per inch of length. If the diameter of the hula-hoop is thirty inches, approximately how much is it worth?

(A) \$4820 (B) \$5120 (C) \$4500 (D) \$5060