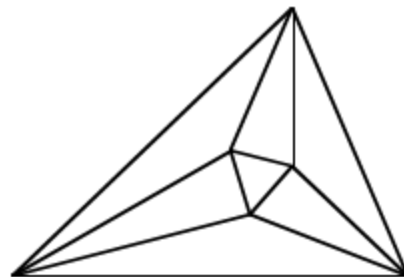


Meet 1 – Event A 2018-19



Questions are worth 2-2-2-4-4 points respectively.

No calculators allowed

_____ 1. Evaluate. Write your answer as a decimal.

$$\frac{3}{10} + \frac{2}{100} + \frac{9}{1000}$$

_____ 2. Which fraction has the largest value? Write the letter.

A. $\frac{3}{10}$

B. $\frac{99}{300}$

C. $\frac{5}{16}$

D. $\frac{101}{301}$

E. $\frac{8}{25}$

_____ 3. Every student at Friendship Middle School gets one piece of fruit with lunch. Of the students, one quarter take a banana, one half take an apple, one tenth take an orange, and the rest take a peach. What fraction of all the students at Friendship Middle School have a peach with lunch? Write your answer in lowest terms.

_____ 4. A new operation, #, is defined as follows:

$$p \# q = p^2 + 2pq + q^2$$

What is the value of $(3 \# 2) \# 7$?

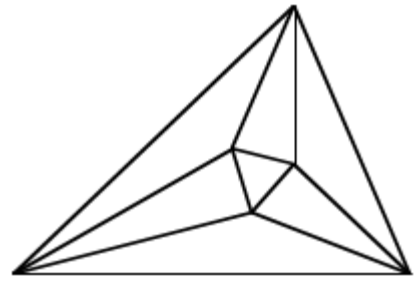
_____ 5. In the equation, m and n are relatively prime positive integers.

$$\frac{1}{2} + \frac{1}{4} = \frac{1}{3} + \frac{1}{5} + \frac{m}{n}$$

What is $m + n$?

Name _____ School _____

Meet 1 – Event A 2018-19



Answers

Questions are worth 2-2-2-4-4 points respectively.

0.329 1. $\frac{3}{10} + \frac{2}{100} + \frac{9}{1000} = 0.3 + 0.02 + 0.009 = \mathbf{0.329}$

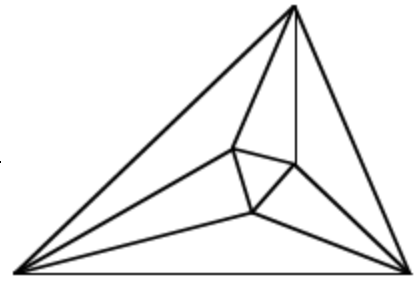
D 2. .

$\frac{3}{20}$ 3. $\frac{1}{4}x + \frac{1}{2}x + \frac{1}{10}x = \frac{5}{20}x + \frac{10}{20}x + \frac{2}{20}x = \frac{17}{20}x$; $\frac{20}{20} - \frac{17}{20} = \frac{3}{20}$

1,024 4. $3 \# 2 = 3^2 + 2(3)(2) + 2^2 = 9 + 12 + 4 = 25$
 $25 \# 7 = 25^2 + 2(25)(7) + 7^2 = 625 + 350 + 49 = \mathbf{1,024}$

73 5. $\frac{30}{60} + \frac{15}{60} = \frac{20}{60} + \frac{12}{60} + \frac{m}{n}$
 $\frac{45}{60} = \frac{32}{60} + \frac{m}{n}$
 $\frac{45}{60} = \frac{32}{60} + \frac{13}{60}$; $13 + 60 = \mathbf{73}$

Meet 1 – Event B 2018-19



Questions are worth 2-2-2-4-4 points respectively.
No calculators allowed

_____ 1. Evaluate: $5^3 - 4^2 - 3^1 - 2^0$

_____ 2. Which is the best estimate for the product of the following multiplication problem? Write the letter.

$$2,999,999,999 \times 4,499,999,999$$

A. 1.2×10^{18}

C. 1.35×10^{18}

E. 1.5×10^{18}

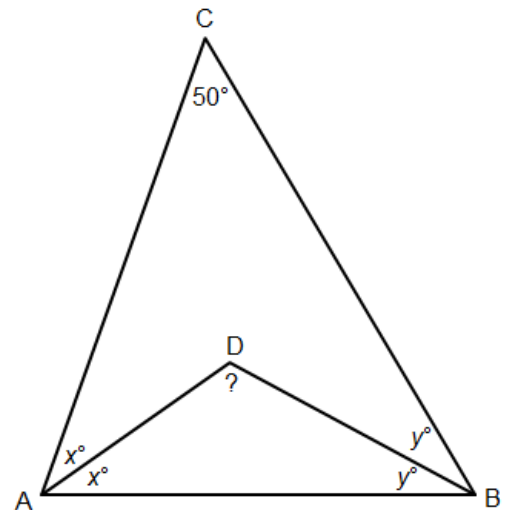
B. 1.2×10^{19}

D. 1.35×10^{19}

F. 1.5×10^{19}

_____ mi 3. Sean starts riding his bike at 2 miles per hour and doubles his speed every half hour. Veronica starts riding her bike at 6 miles per hour and increases her speed by 2 miles per hour every half hour. How much farther has Veronica ridden than Sean after 2 hours?

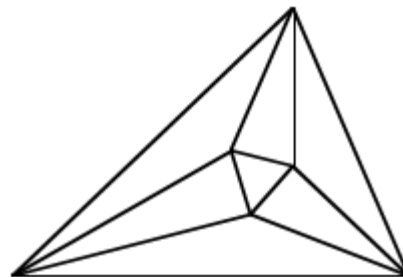
_____ ° 4. In the diagram, segment AD bisects angle CAB, and segment BD bisects angle ABC. The measure of angle C is 50° . What is the measure of angle ADB?



_____ mi 5. Addison, Belleville, Coolidge, and Denton are four small towns along a straight road in that order. The distance from Belleville to Coolidge is $\frac{1}{5}$ the distance from Addison to Coolidge and $\frac{1}{3}$ the distance from Belleville to Denton. The distance from Belleville to Coolidge is 9 miles. How many miles is it from Addison to Denton?

Name _____ School _____

Meet 1 – Event B 2018-19



Answers

Questions are worth 2-2-2-4-4 points respectively.

105 1. $125 - 16 - 3 - 1 = \mathbf{105}$

D 2. $(3 \times 10^9) \times (4.5 \times 10^9) = 13.5 \times 10^{18} = \mathbf{1.35 \times 10^{19}}$

3 mi 3. $18 - 15 = \mathbf{3}$

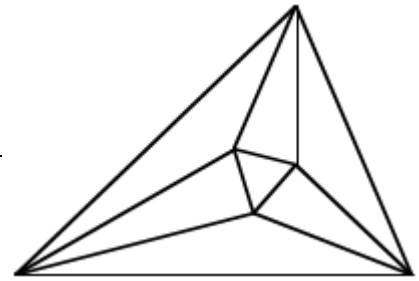
Time (hr)	Sean		Veronica	
	Rate (mph)	Distance (mi)	Rate (mph)	Distance (mi)
0 – 0.5	2	1	6	3
0.5 – 1	4	2	8	4
1 – 1.5	8	4	10	5
1.5 – 2	16	8	12	6
Total		15		18

115° 4. The angles in triangle ABC must add to 180° , so $50 + 2x + 2y = 180$. This means $2x + 2y = 130$. If “twice x plus twice y is 130”, then $x + y = 65$. The angles in triangle ABD must also add to 180° , so the missing angle is $180 - 65 = \mathbf{115^\circ}$.

63 mi 5. $BC = 1/5(AC)$
 $BC = 1/3(BD)$
 $BC = 9$
 $9 = 1/5(AC)$; $AC = 45$ miles
 $9 = 1/3(BD)$; $BD = 27$ miles
 $AD = 45 + 27 - BC = 45 + 27 - 9 = \mathbf{63}$ miles

Meet 1 – Team Event 2018-19

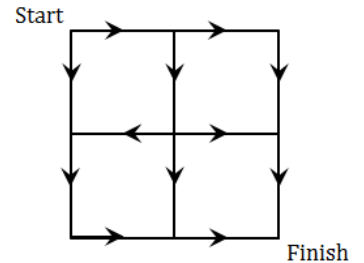
Questions are worth 4 points each.
No calculators allowed



_____ 1. Evaluate. Write your answer as a reduced fraction.

$$\frac{1}{3} + \frac{1}{9} + \frac{1}{27}$$

_____ 2. Following only the paths and directions shown, how many different routes are there from Start to Finish in the diagram?



_____ 3. Shawna is custom-ordering a new bicycle. She can choose the type, gear, and color of the bike. For type, she can choose a mountain bike or a racing bike. For gear, she can choose 18-speed, 21-speed, or 24-speed. For color, she can choose red, blue, green, or white. How many different custom bicycle configurations are possible for Shawna to choose?

 x = _____ 4. What value of x makes the equation true?

$$3^2 \cdot 3^2 \cdot 3^2 \cdot 3^2 = (3^2)^x$$

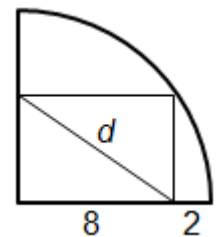
 a.m. 5. Buses leave the terminal every 43 minutes starting at 5:05 a.m. You arrive at the terminal at 8:30 a.m. What time will the next bus leave?

_____ 6. It takes 6 cats 6 minutes to kill 6 rats. If there are 50 rats in a room, how many of these rats can 10 cats kill in 24 minutes?

_____ 7. What fraction represents $0.\overline{5} + 0.\overline{32}$? Write your answer in lowest terms.

_____ 8. A group of 28 pennies is arranged into three piles such that each pile contains a different prime number of pennies. What is the greatest number of pennies possible in any one of the three piles?

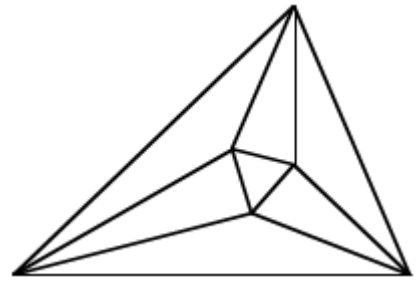
 units 9. A rectangle is inscribed into a quarter circle with dimensions as shown. What is the length of diagonal d ?



_____ 10. When written in standard form, how many digits are in the number $2^9 \times 5^7$?

Name _____ School _____

Meet 1 – Team Event 2018-19



Answers

Questions are worth 4 points each.

13
27 1. $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} = \frac{9}{27} + \frac{3}{27} + \frac{1}{27} = \frac{13}{27}$

5 2. Path 1: R → R → D → D Path 2: R → D → R → D
Path 3: D → D → R → R Path 4: R → D → D → R
Path 5: R → D → L → D → R → R

24 3. 2 types × 3 gears × 4 colors = **24** configurations

x = 4 4. $3^2 \cdot 3^2 \cdot 3^2 \cdot 3^2 = (3^2)^4$

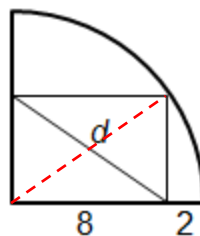
8:40 a.m. 5. 5:05 + 0:43 = 5:48; 5:48 + 0:43 = 6:31; 6:31 + 0:43 = 7:14;
7:14 + 0:43 = 7:57; 7:57 + 0:43 = **8:40**

40 6. 6 cats → 6 rats / 6 min, so 1 cat → 1 rat / 6 min, so 1 cat → 1/6 rat / 1 min, so
1 cat → 4 rats / 24 min, so 10 cats → **40 rats** / 24 min

29
33 7. $0.\overline{5} + 0.\overline{32} = \frac{5}{9} + \frac{32}{99} = \frac{55}{99} + \frac{32}{99} = \frac{87}{99} = \frac{29}{33}$

23 8. 2 + 3 + **23** = 28 pennies

10 units 9. $d = \text{radius} = 8 + 2 = \mathbf{10}$



8 10. $2^9 = (2^3)^3 = 8^3 = 512$
 $5^7 = 5^3 \times 5^3 \times 5 = 125 \cdot 125 \cdot 5 = 78125$
 $78125 \times 512 = 40,000,000$ (**8** digits)