Eighth Grade Iditarod Math Problems

1.

Team Name	# of dogs on teams @ the finish in Nome
King	11
Neff	8
Jonrowe	13
Scdoris	6
Seavey	13
Baker	7
Redington	9
Gould	13
Buser	?

The table shows nine teams that finished the race with the corresponding number of dogs on each team. Given that the mean is 10, find the number of dogs on the Buser team at the finish as well as the median and the mode.

> Buser team: 10 dogs   Median: 10 dogs   Mode: 13

2. DeeDee Jonrowe left Iditarod checkpoint March 11 at 6:12 a.m. and arrived at Shageluk (say SHAG-a-luck) checkpoint March 11 at 2:20 p.m. Lance Mackey left Iditarod checkpoint at 8 a.m. and arrived at Shageluk checkpoint at 3:40 p.m. It's 65 miles between these checkpoints. What is each musher's average speed per hour between Iditarod and Shageluk checkpoints?

> Change minutes to a fraction of the hour by dividing 60 minutes into the number of minutes in each musher's race time.
>
> 8 minutes divided by 60 = .13   65 miles divided by 8.13 hr. = 7.9 mph   DeeDee
>
> 40 minutes divided by 60 = .66.   65 miles divided by 7.66 hr. = 8.5 mph   Lance

3. 102 mushers are racing the 2006 Iditarod Trail Sled Dog Race ™ as of January 2006. Nineteen mushers are women. In the 2005 race, sixteen women raced in a field of 79 mushers. What percent of each race are female mushers? What was the percentage of increase or decrease in women mushers between the 2005 and 2006 races?

> 19/102 = 18.63% women in 2006   16/79 = 20.3% in 2005
>
> 20.3 – 18.63 = 1.67 %

4. The race restart is 2 p.m. on the first Sunday of March. If there are 79 teams and teams leave every 2 minutes beginning at 2 p.m., what time will the last team leave?

> 79 x 2 = 158 minutes = 2 hr. 38 min.   Last team leaves 4:38 p.m.

5. Libby Riddles, the first woman to win the Iditarod, has won the race once. Susan Butcher has won it the same number of times as Martin Buser has. Robert Sorlie has won one more race than Libby and two less than Martin. How many races has Susan won?

Libby 1	Susan 4	Robert 2	Martin 4

6. Temperatures on four race days were as follows: -15 degrees F on Day 3; -39 degrees F on Day 4; -17 degrees F on Day 5; and 4 degrees F on Day 6. What is the greatest difference in temperatures on these days? What is the average temperature of these race days?

> $4 + (-15) + (-17) + (-39) = -67$ degrees F
>
> -67 divided by 4 = -16.75 degrees avg. temp
>
> Greatest difference in temperature is 43 degrees. $4 - (-39) = x$
>
> $$4 + 39 = 43$$

7. Iditarod Trail Race ™ rules require each musher to carry 8 booties in the sled per dog on the team. If 32 teams start with 16 dogs each, and 23 teams start with 14 dogs each, what is the total number of booties in sleds at the race start?

32	23	512	834
x16	x14	+322	x 8
512 dogs	322 dogs	834	6672 booties

8. Mitch Seavey's race time was 9 days, 19 hours, and 20 minutes. Aliy Zirkle's race time was 10 days, 1 hour, and 46 minutes. What was the time difference in their race records?

> 10 d 1 hr. 46/60 hr = 9 d 24 46/60 hr
> -9 d 19 20/60 hr =   9 d 19 20/60 hr
> 5 hr. 26 min.

9. Sled dogs wear booties on their paws for protection from snow, ice, and rough terrain. Jeff King starts with 16 dogs on his team and changes all the booties every 25 miles. It's 413 miles from Anchorage to McGrath checkpoint. How many booties did Jeff uses between Anchorage and McGrath? Round any decimals to the nearest whole number.

413 divided by 25 = 16.52   Round to 17 times he changed booties.

16 dogs x 4 = 64 booties   64 x 17 = 1139 booties

10.

Checkpoints	Distance between Checkpoints in Miles
Ophir to Cripple	59
Cripple to Ruby	112
Ruby to Galena	
Galena to Nulato	52
Nulato to Kaltag	
Kaltag to Unalakleet (YOU-na-la-kleet)	90
Unalakleet to Shaktoolik	42

The distance between Ophir and Shaktoolik is 449 miles. It's 10 miles more between Ruby and Galena than from Nulato to Kaltag. Find the missing distances in the chart above.

$449 - 355 = 94$ miles   x = Nulato to Kaltag   x + 10 = Ruby to Galena

$x + x + 10 = 94$
$2x + 10 = 94$
$2x + 10 - 10 = 94 - 10$
$2x = 84$
2x divided by 2 = 84 divided by 2
$x = 42$ miles from Nulato to Kaltag $42 + 10 = 52$ miles from Ruby to Galena