



**Washington State
Math Championship**

ConocoPhillips
Ferndale Refinery

Blaine School
District

Algebra – 6th Grade

Bubble in your answers on the answer sheet. Be sure to erase all mistakes completely. You do not need to bubble in leading zeros – the answer of “7” does not need to be answered as “007”. If your answer is a fraction like $\frac{3}{16}$, bubble in 316.

- 2 points:** Suppose you began shopping with a certain amount of money in your wallet. If you spent $\frac{1}{4}$ of that amount on groceries, spent $\frac{2}{3}$ of the remaining money on clothing, and finally spent the remaining \$25 on Girl Scout cookies, how many dollars were originally in your wallet?
- 2 points:** If one pipe can drain a pond in 18 hours working by itself, and a larger pipe can drain the same pond in 9 hours working by itself, how many hours will it take to drain the pond if both pipes are working to drain the pond at the same time?
- 2 points:** When you left for an overnight trip at a friend's house, your clock read 9:30pm. The drive to and from your friend's house took half an hour each way and you spent exactly ten hours at your friend's house. However, at some point after midnight, your brother sneakily switched the clock back to midnight. If you arrived home to see 6:00am displayed on your clock, what time did your brother change the clock? If your answer is A:BC, express your answer as a three-digit number ABC.

- 3 points:** If $\square_x = 3 - 2x$ and $\triangle_x = 6x^2$, what is the value of the expression $\triangle_{\square_3} - \square_{\triangle_3}$?

- 3 points:** Suppose you and your sister have cell phone plans A and B, respectively. Plan A costs \$80 each month plus \$0.10 for each text message *used*. Plan B costs \$40 per month plus \$0.25 for each text message *used*. *If you and your sister use the same number of text messages, what is the least number of text messages your sister would need to use for her plan to be more expensive than yours?*

- 3 points:** Consider the following school schedule:

8:30	School Begins
8:30-10:00	Math Workshop
10:00-10:15	Recess
10:15-11:30	Reading Workshop
11:30-12:15	Recess/Lunch
12:15-1:45	Science/Social Studies Workshop
1:45-2:30	Physical Education (PE)
2:30	School Ends

What percentage of the school day was spent either in an academic workshop or in PE? **Express your answer to the nearest whole percent.**



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7. **3 points:** During one of his longer work days, Larry spent the first $\frac{1}{3}$ of the work day fixing computer issues. Then, he took a 15 minute break. After spending another $\frac{1}{4}$ of the work day creating a new computer program, he took a half-hour break. He spent the next $\frac{1}{12}$ of the work day fixing even more computer issues, but then proceeded to fall asleep for the remaining 45 minutes from complete exhaustion. How many hours long was Larry's work day? **Express your answer as a decimal.**
8. **4 points:** Before the marathon, your friend timed you on a few short runs, finding that your average distance ran in 15 seconds was exactly 1320 inches. If you happened to follow that same pace, on average, for the first hour of the marathon, how many miles will you have run?
9. **4 points:** What is the y -coordinate of the point where the lines $y = 3x + 27$ and $3y = -18x - 27$ intersect?
10. **4 points:** By selling a tuxedo for \$480, Mr. Mathman made 25% more money than he would have made by selling it for \$400. How much money, in dollars, did he originally pay for the tuxedo?