

Date Completed: _____
Mentor Initials: _____

A mentor can change everything.



Fractions and Percentages

Non-Calculator: Multiple Choice

1. James buys a Supreme T-shirt for \$45 and sells it for \$63. What is his percent profit?
A) 10%
B) 20%
C) 40%
D) 50%
2. Lottie buys a coat for \$60. If the original price is \$80, what is the percent decrease in the price Lottie paid?
A) 10%
B) 15%
C) 25%
D) 33%
3. If 10 is 2% of z , what is 50% of z ?
A) 75
B) 125
C) 250
D) 500
4. If p and q are positive numbers, what percent of $(q^3 - 4)$ is p ?
A) $\frac{p}{q^3 - 4}$
B) $\frac{100p}{q^3 - 4}$
C) $\frac{100(q^3 - 4)}{p}$
D) $\frac{p}{100(q^3 - 4)}$
5. If 60% of x is equal to 150% of y , then y is what percent of x ?
A) 0.2%
B) 0.4%
C) 20%
D) 40%

6. Last year, Michelle Kwan won 60% of her figure skating tournaments. She placed second or lower 20 times. How many tournaments did she compete in?
 - A) 25
 - B) 40
 - C) 50
 - D) 100

7. The price of a DVD player was decreased from \$300 to \$180. By what percent was the price decreased?
 - A) 20%
 - B) 30%
 - C) 40%
 - D) 60%

Non-Calculator: Grid In

8. Miranda, Lana, and Jonathan bought 24 pots of smoked hummus. Jonathan ate y pots of hummus and Miranda ate half as many. If Lana ate four times as many pots of Hummus as Miranda, and all three of them ate $\frac{7}{8}$ of the hummus, how many pots of hummus did Miranda eat?

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9. Lydia wants to get some extensions before her date on Friday. At ‘Comb As You Are’ it will cost Lydia \$250 to get her extensions. The salon ‘Dye Hard’ is offering a 20% discount on all hair treatments. If it normally costs \$275 to have extensions done at ‘Dye Hard’ how much money will Lydia save if she gets her extensions done there compared to if she were to get them done at ‘Comb As You Are’?

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Calculator: Multiple Choice

10. Cardi B was shopping for a pair of Louboutins. A pair were on sale for 35% off, with her celebrity status getting her additional 20% discount on the sale price. What was the final price of the Louboutin's in terms of the original sales price x ?
- A) $\frac{13}{25}x$
- B) $\frac{9}{20}x$
- C) $\frac{11}{20}x$
- D) $\frac{12}{25}x$
11. The radius of a circle is increased by 20%. What is the percent increase in the area of the circle?
- A) 22%
- B) 25%
- C) 44%
- D) Cannot be determined from the given information.
12. Clare is enlarging a circular photo of herself for her scrapbook. If the new image has a diameter that is 75% bigger than the original, what percent bigger is the new area?
- A) 75%
- B) 150%
- C) 200%
- D) 300%
13. On Tuesday, a 'Green Mamba' ice cream in Harare cost \$5. The price increased by 15% on Wednesday and 22% on Thursday, but on Friday the price was reduced by 20% for a weekend promotion. How much would a 'Green Mamba' cost on Friday?
- A) \$1.40
- B) \$5.61
- C) \$5.85
- D) \$8.41

14. The amount of people eating avocado on toast for brunch increased by 20% between 2015-2016. It then increased 35% from 2016-2017. What is the percent increase of people eating avocado on toast between 2015 and 2017?
- A) 45%
 - B) 55%
 - C) 59%
 - D) 62%
15. You want to buy a t-shirt that originally costs \$75. However, it is on sale for 25% off and you are able to take an additional 10% student discount. 7% tax is then added to your purchase. How much do you pay?
- A) \$48.75
 - B) \$54.17
 - C) \$67.50
 - D) \$80.40
16. Jim is saving up for his wedding. He puts \$1,000.00 in a high-interest saving account with an annual interest rate of 7%. How much money is in the account after 7 years (to the nearest \$100)?
- A) \$1,500
 - B) \$1,600
 - C) \$7,000
 - D) \$41,000

Calculator: Grid In

Questions 17 and 18 refer to the following information.

If individuals visit a website at an average rate of r individuals per minute and each stay on the site for an average of T minutes, the average number of individuals on the site, N , at any one time is given by the formula $N = rT$.

17. Susie has started a dog grooming business, 'Bark Avenue' and estimates that during the day an average of 3 individuals per minute visit the webpage and stay for an average of 15 minutes. By this estimate, how many people are there on the website at any one time?

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18. As part of her advertising campaign, Susie uses Google AdWords on weekends to drive traffic to her website. During the weekend, she estimates that an average of 270 users per hour visit her website and stay for an average of 18 minutes. The average number of people visiting the website on weekends is what percentage more than the average number of people visiting the website during the week, when Susie is not using Google AdWords to advertise her business?

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