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Practice Assignment 2B

Algebra & Functions (Maths 201–016)

Markups

$$SP = C + M$$

$$M = MR \cdot C$$

Discounts

$$SP = OP - D$$

$$D = DR \cdot OP$$

1. $C = \$120$, $MR = 15\%$. $SP=?$
2. $C = \$70$, $SP = \$105$. $MR=?$
3. $C = \$120$, $SP = \$180$. $M=?$
4. I went down to St. Catherine Street the other day and bought a really fancy t-shirt. It cost me \$200, but I found out later that the store marks up all their merchandise by 25%. What did the store pay for this fancy t-shirt?
5. I went to the convenience store and bought a bag of organic milk. It cost me \$7.50, but I know that the store only paid \$6. What is the store's markup rate for organic milk?
6. I bought a flat-screen TV from Best Buy for \$1404. I have a buddy who works there, and he told me that Best Buy marks up all their TVs by 17%. What is Best Buy's cost for the TV that I bought?
7. The convenience store pays \$1.80 for my favourite bag of chips and then marks it up 15%. What is the selling price for this bag of chips?
8. The store where I bought my new shoes marks up their products by 20%. If I paid \$48 for these shoes, how much did the store pay for them?
9. I only drink the finest orange juice. A litre of it costs me \$174, but I know that the juice company pays only \$150. What is the markup rate on this very fine litre of juice?
10. My local pet food store marks up its products by 25%. If I paid \$65 for a bag of dog food, what is the store's cost?
11. $OP = \$210$, $DR = 20\%$. $SP=?$
12. $SP = \$4.25$, $OP = \$5$. $DR=?$
13. $SP = \$187$, $OP = \$255$. $D=?$
14. A textbook is on sale for \$63 after a discount of 16%. Find the original price of the textbook.
15. A pair of shoes is on sale for 35% off. If they usually cost \$300, what is the sale price?
16. The Super Awesome Smart Toaster is on sale at \$85 after a 32% discount. What was the original price of the toaster?
17. The Not Very Awesome Dumb Toaster is on sale at \$133. If the original price is

\$175, what is the discount rate on this toaster?	Answers
18. I bought a Twilight novel on sale for \$9.75. It was for a friend. Apparently this was 25% off the original price. What was the original price?	1. \$138
19. A hat shaped like a wild turkey is on sale for \$126. It's a very nice looking turkey hat. If the original price is \$152, what is the discount on this item?	2. 50%
20. When I see an Xbox on sale for 12%, I buy it, even if I already own an Xbox. Last time I did this it cost me \$176. What was the original price?	3. \$60
21. I bought a smartphone on sale for \$99. The original price was \$150. What was the discount rate for this smartphone?	4. \$160
22. An exercise bike is on sale for \$390 after a discount of 25%. Find the regular price of the bike.	5. 25%
	6. \$1200
	7. \$2.07
	8. \$40
	9. 16%
	10. \$52
	11. \$168
	12. 15%
	13. \$68
	14. \$75
	15. \$195
	16. \$125
	17. 24%
	18. \$13
	19. \$26
	20. \$200
	21. 34%
	22. \$520

Simple Interest

Recall $I = Prt$

1. My initial investment of \$3000 earned \$1440 in interest after four years. What was the (simple) interest rate?
2. How long will it take for a principal of \$3500 to earn \$420 in interest if the annual interest rate is 4%?
3. My initial investment of \$5000 earned \$600 in interest after four years. What was the (simple) interest rate?
4. How much (simple) interest is accumulated if I invest \$25 at 9% for six years?
5. My investment earns 2% in simple interest. After five years I notice that the accumulated interest is \$143. What was my principal?
6. Suppose you borrow \$1600 at a simple annual interest rate. The loan with interest was to be repaid at the end of the second year. What was the annual interest rate if a total of \$2048 was repaid?
7. I would like to invest some money and earn \$105 in simple interest after 60 months. If the interest rate is 7%, how much principal do I need to put down?
8. What is the interest rate if a principal of \$25000 earns \$5000 in interest after 48 months?
9. How long will it take for a principal of \$2600 to earn \$390 in (simple) interest if the annual rate is 3%?
10. Suppose you borrow \$480 at a simple annual interest rate. The loan with interest was to be repaid at the end of the seventh year. What was the annual interest rate if a total of \$648 was repaid?

Answers

23. 12%
24. 3 years
25. 3%
26. \$13.50
27. \$1430
28. 14%
29. \$300
30. 5%
31. 5 years
32. 5%