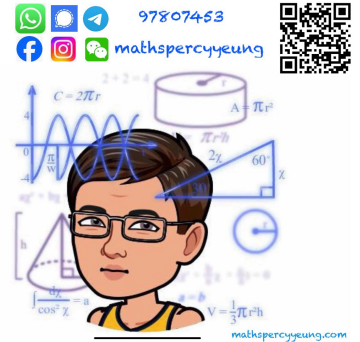


Chapter 2 More about Percentages

Multiple Choice Section



Allowances	
Basic allowance	\$ 108 000
Married person allowance	\$ 216 000
One child	\$ 30 000
Dependent parent allowance	\$ 30 000
Additional dependent parent allowance	\$ 30 000

financial year 2001/2002:

Net chargeable income	Rate	Tax
First \$35 000	2%	\$700
Second \$35 000	7%	\$2 450
Second \$35 000	12%	\$4 200
Remainder	17%	

Rates: 5%

Property tax rate: 15%

Profit tax rate: 16%

- Joe got 756 marks and Karen got 347 marks in an online game. What is the percentage of Karen's score to Joe's score? (Correct your answer to the nearest integer.)
 - 45%
 - 46%
 - 217%
 - 218%
- The selling prices of a set of CD game and a book are \$359 and \$54 respectively. What is the percentage of the price of the book to that of the set of CD game? (Correct your answer to 3 significant figures.)
 - 15.0%
 - 15%
 - 664%
 - 665%
- The length of Jensen's pen is 11 cm and that of Jane's pen is 90 mm. What is the percentage of the length of Jensen's pen to that of Jane's pen? (Correct your answer to the nearest 1%.)
 - 81%
 - 82%
 - 122%
 - 123%

4. A has $\$x$ and B 's amount is $\frac{4}{5}$ time A 's amount. What is the percentage of B 's amount to A 's amount?
- A. 20%
 - B. 25%
 - C. 80%
 - D. 125%
5. Yesterday the selling price of a certain air-conditioner is $\$3\ 800$. If yesterday's selling price is 80% of today's selling price, find the selling price of the air-conditioner today.
- A. $\$2\ 111$
 - B. $\$3\ 040$
 - C. $\$4\ 750$
 - D. $\$6\ 840$
6. What is the percentage change if 50 is changed to 70?
- A. +40%
 - B. 40
 - C. -40%
 - D. -40
7. What is the percentage change if 50 is changed to 15?
- A. -35%
 - B. +35%
 - C. -70%
 - D. +70%
8. If a certain number is reduced by 25%, it becomes 60. Find the number.
- A. 15
 - B. 45
 - C. 75
 - D. 80
9. A tree is 6 m tall. If its height increases 6% p.a., what was the height of the tree last year? (Correct your answer to 3 significant figures.)
- A. 5.64 m
 - B. 5.66 m
 - C. 6.25 m
 - D. 6.36 m

10. If 12 % of a bottle of green tea is drunk, 484 mL remains. What is the original capacity of the bottle of green tea?
- A. 58 mL
 - B. 176 mL
 - C. 347 mL
 - D. 550 mL
11. A certain number is increased by 70% and then it is decreased by 70%. What is the percentage change of the number?
- A. -70%
 - B. -49%
 - C. 0
 - D. +49%
12. The cost of a basketball is \$50. The marked price of the basketball is 70% more than its cost. If the basketball is sold at a discount of 20%, find the selling price of the basketball.
- A. \$42
 - B. \$60
 - C. \$68
 - D. \$85
13. A has \$2 500, B has 20% more than A and C has 35% less than B . What is the percentage of C 's amount to A 's amount?
- A. 62%
 - B. 78%
 - C. 128%
 - D. 162%
14. The base and the height of a triangle are 20 cm and 30 cm respectively. If the base is increased by 10% and the height is decreased by 10%, what is the percentage change in its area?
- A. Increased by 1%
 - B. Decreased by 1%
 - C. Increased by 10%
 - D. Decreased by 10%
15. The area of a square is 400 cm^2 . If each side is decreased by 20%, what is the percentage change in its area?
- A. Decreased by 20%
 - B. Increased by 20%

- C. Decreased by 36%
- D. Increased by 36%
16. In the first term, the ratio of the numbers of boys to girls in F.3 is 3 : 2. If the number of girls is decreased by 18% and that of the boys is increased by 14% in the second term, what is the percentage change in the number of students in F.3?
- A. Increased by 1.2%
- B. Decreased by 3.6%
- C. Increased by 4%
- D. Decreased by 5.2%
17. If the principal is \$7 000 and the interest rate is 6% p.a., find the simple interest obtained after 3 years.
- A. \$420
- B. \$1 260
- C. \$1 340
- D. \$1 500
18. Mr. Ng deposits \$18 000 at a bank at an interest rate of 8% p.a. Find the simple interest that he will get after 1 year and 3 months.
- A. \$1 200
- B. \$1 400
- C. \$1 600
- D. \$1 800
19. Mr. Chan borrows \$70 000 from a finance company at an interest rate of 15% p.a. for a period of 4 years. Find the amount Mr. Chan will have to repay after 4 years on simple interest.
- A. \$75 000
- B. \$80 500
- C. \$96 500
- D. \$112 000
20. Peggy deposited some money at her bank account. She earned \$4 000 simple interest in 5 years. If the interest rate is 8% p.a., find the principal.
- A. \$10 000
- B. \$12 500
- C. \$45 700
- D. \$50 000

21. If the principal is \$10 000 and the interest rate is 4% p.a., how long does it take to earn \$2 000 simple interest?
- A. 1 year
 - B. 2 years
 - C. 5 years
 - D. 50 years
22. Mr. Cheng deposited \$3 500 at a bank at an interest rate of 8% p.a. After 1 year, he withdrew the amount and deposited the amount at another bank. If the interest rate was unchanged, calculate the total interest that he got after 2 years.
- A. \$532.4
 - B. \$582.4
 - C. \$632.4
 - D. \$682.4
23. Jennifer deposits \$9 000 at a bank at an interest rate of 4% p.a. compounded quarterly. Find the amount she will get after 1 year. (Correct your answer to the nearest dollar.)
- A. \$9 181
 - B. \$9 365
 - C. \$9 734
 - D. \$10 529
24. Calvin deposits \$12 000 at a bank at an interest rate of 6% p.a. compounded half-yearly. Find the interest he will get after 2 years. (Correct your answer to the nearest dollar.)
- A. \$731
 - B. \$1 483
 - C. \$1 506
 - D. \$3 150
25. Miss Cheung deposits \$20 000 at a bank. The interest is compounded every four months and an amount of \$21 854.54 will be earned after 1 year. Find the interest rate per annum.
- A. 2.6%
 - B. 7%
 - C. 8%
 - D. 9%
26. \$3 000 is deposited for 5 years at an interest rate of 10% p.a., find the difference between the simple interest and the compound interest compounded yearly.
- A. \$331.53

- B. \$332
- C. \$667
- D. \$671

27. Samuel borrows \$10 000 from a finance company and he repays the amount after 8 months. According to the methods of calculating interest of three finance companies below, arrange the amount of repayments in ascending order.

Finance company S : Interest rate is 18% p.a., compounded monthly.

Finance company Q : Interest rate is 28% p.a., compounded every four months.

Finance company R : Interest rate is 22% p.a., compounded every two months.

- A. $S < R < Q$
- B. $Q < R < S$
- C. $R < S < Q$
- D. $Q < S < R$

28. A tree is 6 m tall. If the height of the tree increases 15% p.a., find the growth factor.

- A. 0.3
- B. 0.9
- C. 1.05
- D. 1.15

29. The value of a mobile phone is \$3 000. If the mobile phone depreciates 30% p.a., find the depreciation factor.

- A. 0.3
- B. 0.7
- C. 1.3
- D. 1.7

30. The value of a certain flat has depreciated 3% p.a. for the last two years. If the value of the flat per square foot is \$3 850 this year, find its value two years ago. (Correct your answer to the nearest integer.)

- A. \$3 969 per square foot
- B. \$4 010 per square foot
- C. \$4 090 per square foot
- D. \$4 092 per square foot

31. The number of a certain bacteria increases by 10% per hour. If there are 80 000 bacteria, find the difference between the numbers of bacteria 2 hours ago and 2 hours later. (Correct your answer to the nearest integer.)

- A. 15 273

- B. 29 333
C. 30 684
D. 34 348
32. The quarterly rates payable for a flat are \$650, find the rateable value of the flat. (Suppose the rates percentage charge is 5%.)
A. \$3 250
B. \$13 000
C. \$25 000
D. \$52 000
33. The property tax of a flat was \$45 000 for 2001/2002, find the annual rental income.
A. \$300 000
B. \$335 000
C. \$375 000
D. \$900 000
34. Mr. Chan is the owner of two flats *A* and *B*. For the financial year 2000/2001, the property tax of flat *A* was twice that of flat *B*. For the financial year 2001/2002, the annual rental income of flat *A* and that of flat *B* decreased by 16% and 13% respectively. If the annual rental income of flat *B* in 2000/2001 was \$36 000, find the difference between the property taxes of the two flats for the financial year 2001/2002. (Assume that the standard tax rates of the financial year 2000/2001 and 2001/2002 were the same.)
A. \$129.6
B. \$1 080
C. \$3 499.2
D. \$4 374
35. The net profit of a limited company for the financial year 2001/2002 was \$1 750 000. Find the profits tax of the company.
A. \$87 500
B. \$210 000
C. \$262 500
D. \$280 000
36. Sam was single, and his total income for the financial year 2001/2002 was \$109 000. Find his salaries tax.
A. \$20
B. \$200
C. \$2 180
D. \$7 630

37. Mr. and Mrs. Lee had one child. They lived with and supported their 63-year-old father and 58-year-old mother in a family. Find their maximum income if they did not have to pay any tax for the financial year 2001/2002.
- A. \$168 000
 - B. \$198 000
 - C. \$276 000
 - D. \$306 000

Section A(1)

1. The daily pocket money of David and Mary are \$50 and \$80 respectively.
 - (a) Find the percentage of David's pocket money to Mary's.
 - (b) Find the percentage of Mary's pocket money to David's.

2. The original price of a TV game player was \$1 250. In a big sales, the price of it was \$1 020. Find the percentage change in the price of the TV game player.

3. The price of a book is \$135. If the price of the book is increased by 12%, find the new selling price of the book.

4. There are 50 cats in a pet shop. If 16% of them are sold, how many cats are left?

5. The value of a flat is now \$3 600 000 and it depreciates 5% p.a. Find its value after 2 years.

6. The monthly salary of an employee is \$26 000. It is increased by 5% this month but it will be decreased by 5% next month.
 - (a) Find his monthly salary next month.
 - (b) Find the percentage change in his monthly salary.

7. If the principal is \$5 000 and the interest rate is 6% p.a., find the simple interest and the amount after 3 years.

8. Jenny deposited some money at the bank. She earned \$720 simple interest in 18 months. If the interest rate was 12% p.a., find the principal.
9. Mr. Tong deposits \$43 200 at a bank at an interest rate of 7.5% p.a. How long does it take to earn \$8 100 simple interest?
10. Find the amount for a principal \$20 000 after 3 years at an interest rate of 15% p.a. compounded yearly.
11. Susan deposits \$320 000 at a bank at an interest rate of 8% p.a. compounded quarterly.
- (a) Find the amount she will get after $1\frac{1}{2}$ years.
- (b) Find the interest she will get.
- (Correct your answers to the nearest dollar.)
12. A plant is 10 m tall. If the height of the plant increases 10% p.a., find the height of the plant after 2 years.
13. A car depreciates 20% each year. If the value of the car is \$150 000, find its value after 4 years.
14. The ratable value of a flat are \$62 400, find the quarterly rates payable. (Suppose the rates percentage charge is 5%.)
15. The annual rental income of a flat is \$115 200. What is the property tax? (Suppose the standard tax rate is 15%.)
16. The gross profit of an unlimited company for the financial year 2001/2002 was \$1 720 000 and the expenditure was \$360 000. Find the profits tax of the company.

17. The total income of a single man was \$252 000 for the financial year 2001/2002. Find his salaries tax.
18. Mr. and Mrs. Chan had two children. They lived with and supported their 72-year-old mother. Their total income for the financial year 2001/2002 was \$340 000. If they chose the joint assessment, find their salaries tax.

Section A(2)

19. After deducting the monthly salary of an employee by 1.7%, his monthly salary is reduced by \$357. Find his original monthly salary.
20. In a Mathematics test, 140 students got a pass. If the number of students who got a pass was 12% more than that of the last Mathematics test, how many students got a pass in the last test?
21. The property tax of a flat is \$7 632, find the monthly rental income. (Suppose the standard tax rate is 15%.)
22. Celia lends \$5 000 to Ben at an interest rate of 6% p.a. and she lends \$6 000 to Simon at an interest rate of 5% p.a. Find the simple interest she will earn after 1 year.
23. The length of a rectangle is increased by 25% and its width is decreased by 15%. Find the percentage change in its area.
24. Each side of a cube is decreased by 10%. Find the percentage change in its volume.
25. Mr. Chow deposited some money at his bank account. If the interest rate p.a. was decreased from 8% to 5%, he would get \$5 100 less as simple interest each year. Find the principal.

26. Mr. Tsang deposits some money at a bank at an interest rate of 6% p.a. He gets \$600 simple interest after $\frac{1}{2}$ year.
- (a) How much does Mr. Tsang deposit at the bank initially?
- (b) If the interest rate p.a. is now increased by 2%, calculate the simple interest that he will get after $\frac{1}{2}$ year.
27. Mr. Wong bought a car 2 years ago. The car depreciates 15% p.a. If the value of the car is \$289 000,
- (a) find the value of the car after 3 years. (Correct your answer to the nearest hundred dollars.)
- (b) find the price of the car 2 years ago.
28. The profits tax of a limited company was \$66 400 for the financial year 2001/2002. If the operating expenses were \$35 000, find the gross profit of the company.
29. Sandy was single. She supported her parents who were over 70 years old and did not live with her. Find her maximum average salary per month if she did not have to pay any tax for the financial year 2001/2002.

Section B

30. Benjamin have just borrowed \$80 000 from a bank at an interest rate of 12% p.a. compounded monthly. If he repays \$25 000 at the end of each month, how much will he owe the bank at the end of the third month?
31. Mr. Ho borrows some money from a bank at an interest rate of 20% p.a. compounded half-yearly. If the amount is \$531 468.3 after 3 years, how much is the loan?
32. A certain green tea is mixed from Brand *A* tea and Brand *B* tea in the ratio of 1 : 2. The prices of Brand *A* tea and Brand *B* tea are \$36 per kg and \$24 per kg respectively. If the prices of Brand *A* tea and Brand *B* tea are increased by 10% and 5% respectively, find the percentage change in the price of the green tea per kg. (Correct your answer to 3 significant figures.)

- 33.** Mr. Law borrows \$15 000 from a bank for a period of 1 year.
- (a) If the interest rate is 12% p.a., find the simple interest.
 - (b) If the interest rate is 10% p.a. compounded half-yearly, find the interest.
 - (c) If the interest rate is 10% p.a. compounded half-yearly and he repays \$5 000 after $\frac{1}{2}$ year, find the interest.