Simple Interest and Percentage Applications Test

Year Non Calculator

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Margie gets a 6% discount on a denim dress. If the dress normally costs $75.00, what did she pay after the discount?

$\frac{6}{100} \times 75 = \frac{9}{2} = \$4.50$

New price = 75.00 − 4.50 = $71.50.

2. An electrical store makes a 70% profit on the cost price of all of its sales. If the store sells a DVD player for $102, how much profit did they make on the sale?

SP = 170% of CP = 102

10% of CP = 102 ÷ 17 = 6

100% of CP = 6 × 10 = $60.00

3. Meko buys an MP4 player at this sale. If she saved $20 compared to the full price, how much did she pay for the MP4player?

8% of original price = $20

4% " " " = $10

100% " " " = 10 × 25 = $250

Saved $20 so payed $230.

4. A coat is offered for sale at a discount of 20%. Its price during the sale was $96.00. What did the coat cost before the discount?

80% of orginal = 96 Orginal = $120

10% of orginal = $12

5. The price of petrol dropped from $1.80 per litre to $1.20 per litre. Find the percentage decrease in price (to the nearest percent.)

Drop = 0.60 % decrease = $\frac{60}{180} \times 100$

$= \frac{1}{3} \times 100$

$= 33\frac{1}{3}\%$ decrease.

6. Maisie borrows $250 and pays simple interest on the principal for 3 years at 12% p.a. How much interest does she pay?

$SI = PRN = 250 \times 0.12 \times 3$

$= 750 \times 0.12 = \$90$

7. Justin invested $600.00 at 15% p.a simple interest for a period of time and earned $360.00 in interest. How long was the money invested for?

$SI = PRN \qquad 360 = 600(0.15)N$

$360 = 90N \qquad N = \frac{360}{90} = 4 \text{ years}$

8. Phil needs to earn $400 in interest in 2 years. The best simple interest rate that he can find is 5% p.a. How much would he need to invest to achieve his aim of $400 in interest?

$400 = P(0.05)(2) \qquad P = \frac{400}{0.1}$

$400 = 0.1P \qquad = \$4000$

9. Andrea invests $5 000 at 8% p.a. simple interest for a period of 9 months. How much interest does she earn?

$SI = 5000(0.08)\left(\frac{9}{12}\right)$

$= 5000(0.06)$

$= \$300$

10. Candida is offered a loan that will see her earn $360 in simple interest from an investment of $1 200 for 6 years. What was the simple interest rate?

$SI = PRN \qquad 360 = 1200(R)6 \qquad R = \frac{360}{7200} = \frac{1}{20}$

$360 = 7200R \qquad = 0.05$

Rate is 5% pa.

Simple Interest and Percentage Applications Test

Year

Calculator

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. Justin buys a mobile phone during a promotion where a discount of 15% is given. The normal price of the phone is $540.00. What does Justin pay for the phone?

   A. $81.00 B. $525.00 C. $459.00 D. $621.00

2. Aleisha goes to a sale that offers 30% off everything. She buys a dress which was originally priced at $125.40 What would she pay for this dress?

   A. $95.40 B. $87.78 C. $37.62 D. $34.00

3. Raj puts 35% of his income into savings. How much is his income in a week when he saves $182.00?

   A. $63.70 B. $245.70 C. $520.00 D. $702.00

4. Margie goes to a store that offers 6% discount on all dresses. If a dress costs $141.00 after the discount, what was its original price?

   A. $84.60 B. $132.54 C. $150.00 D. $2 350.00

5. Jason invests $16 000 at 4% p.a for 5 years. How much interest does he earn?

   A. $1 600 B. $3 200 C. $10 020 D. $19 200

6. Calculate the simple interest on $1200 for 5 months at 6% per annum.

   A. $30 B. $72 C. $360 D. $3000

7. Kim buys a bike for $200 and sells it to Chris for $150. Which of the following is true?

   A Kim makes a loss of $33\frac{1}{3}\%$ on cost price

   B Kim makes a loss of 50 % on cost price

   C Kim makes a loss of 25 % on cost price

   D Kim makes a loss of 75 % on cost price

8. Madisson invests the $600 that her grandmother gave her for her birthday in an account that pays 18% pa simple interest. How much interest does she earn if she leaves her money in the account for 9 months?

A. $972.00 B. $109.80 C. $81.00 D. $108.00

9. Jo borrows $3 000 at 8.5% p.a. simple interest. If she has to pay $1 020 in interest, what period was the loan taken over?

A. 1 year. B. 2 years. C. 3 years. D. 4 years.

10. Manny invests the $1 500 he was given for his 18th birthday for 3 years and earns $225 in simple interest. What was the interest rate?

A. 5% p.a. B 5.5% p.a. C. 6% p.a. D. 6.5% p.a.

11. A discount of 12% is given on an article priced at $45. What is its selling price?

A. $37.35 B. $39.60 C. $5.40 D. $26.00

12. Sean buys a video game for $85 and sells it later for $68. What is his percentage loss on the cost price?

A. 17% B. 20% C. 25% D. 80%

Year 10

Surds Test Non Calculator

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Simplify $\sqrt{80}$

$= \sqrt{16} \times \sqrt{5}$

$= 4\sqrt{5}$

2. Simplify $12\sqrt{5} - 3\sqrt{5} + \sqrt{5}$

$= 10\sqrt{5}$

3. Simplify $\sqrt{20} + \sqrt{45}$

$= 2\sqrt{5} + 3\sqrt{5} = 5\sqrt{5}$

4. Expand and simplify $3\sqrt{2}\,(\sqrt{3} - 3\sqrt{2})$

$= 3\sqrt{6} - 9\sqrt{4}$

$= 3\sqrt{6} - 18$

5. Express $\frac{4}{3\sqrt{2}}$ with a rational denominator.

$\frac{4}{3\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{6} = \frac{2\sqrt{2}}{3}$

6. Expand and simplify $(\sqrt{2} - \sqrt{3})(3\sqrt{2} - 2\sqrt{3})$

$= 3\sqrt{4} - 2\sqrt{6} - 3\sqrt{6} + 2\sqrt{9}$

$= 6 - 5\sqrt{6} + 6$

$= 12 - 5\sqrt{6}$

7. Arrange in ascending order: $2\sqrt{3}$, 3, $\sqrt{10}$, $2\sqrt{2}$

$\sqrt{12}, \sqrt{9}, \sqrt{10}, \sqrt{8}$

In order $2\sqrt{2}, 3, \sqrt{10}, 2\sqrt{3}$

8. Express $\frac{4\sqrt{3}}{3 - \sqrt{3}}$ with a rational denominator.

$\frac{4\sqrt{3}}{(3-\sqrt{3})} \frac{(3+\sqrt{3})}{(3+\sqrt{3})} = \frac{12\sqrt{3}+12}{9-3} = \frac{12\sqrt{3}+12}{6} = 2\sqrt{3}+2$

Year 10

Surds Test Calculator

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. Which of the numbers below is rational?

A. π **B.** $\sqrt{16}$ **C.** $\sqrt{7}$ **D.** $3\sqrt{2}$

2. Which of the numbers below not a surd?

A. π **B.** $\sqrt{45}$ **C.** $\sqrt{23}$ **D.** $2\sqrt{7}$

3. $\sqrt{6} \times \sqrt{5} =$

A. $6\sqrt{5}$ **B.** $\sqrt{30}$ **C.** $5\sqrt{6}$ **D.** $\sqrt{11}$

4. $3\sqrt{3} \times 2\sqrt{5} =$

A. $15\sqrt{6}$ **B.** $9\sqrt{10}$ **C.** $3\sqrt{30}$ **D.** $6\sqrt{15}$

5. If $2\sqrt{10} = \sqrt{x}$ then $x = ?$

A. 20 **B.** 200 **C.** 12 **D.** 40

6. Which of the following is in descending order?

A. $2\sqrt{5}$, 5, $\sqrt{15}$, $2\sqrt{7}$ **B.** $2\sqrt{7}$, $2\sqrt{5}$, 5, $\sqrt{15}$

C. $2\sqrt{7}$, 5, $2\sqrt{5}$, $\sqrt{15}$ **D.** $\sqrt{15}$, $2\sqrt{5}$, 5, $2\sqrt{7}$

7. $\sqrt{72} =$

A. $6\sqrt{2}$ **B.** $3\sqrt{4}$ **C.** $4\sqrt{3}$ **D.** $2\sqrt{6}$

8. $8\sqrt{5} =$

A. $\sqrt{40}$ **B.** $\sqrt{160}$ **C.** $\sqrt{320}$ **D.** $\sqrt{640}$

9. $2\sqrt{3} + 5\sqrt{3} =$

A. $10\sqrt{3}$ **B.** $10\sqrt{6}$ **C.** $7\sqrt{6}$ **D.** $7\sqrt{3}$

---

10. $11\sqrt{7} - 5\sqrt{7} + 2\sqrt{7} =$

A. $18\sqrt{7}$ **B.** $8\sqrt{7}$ **C.** $8\sqrt{21}$ **D.** $18\sqrt{21}$

---

11. $\sqrt{12} + \sqrt{27} =$

A. $13\sqrt{3}$ **B.** $\sqrt{39}$ **C.** $5\sqrt{3}$ **D.** $5\sqrt{9}$

---

12. $2\sqrt{24} + 3\sqrt{54} =$

A. $13\sqrt{3}$ **B.** $13\sqrt{4}$ **C.** $6\sqrt{13}$ **D.** $13\sqrt{6}$

---

13. $\dfrac{10}{\sqrt{3}} =$

A. $\dfrac{10\sqrt{3}}{3}$ **B.** $10\sqrt{3}$ **C.** $\dfrac{10\sqrt{3}}{9}$ **D.** $3\sqrt{10}$

---

14. $\sqrt{3}\,(6 + \sqrt{3}) =$

A. $\sqrt{18} + \sqrt{9}$ **B.** $6\sqrt{3} + 3$ **C.** $6\sqrt{3} + 9$ **D.** $\sqrt{18} + 9$

---

15. $(2 - \sqrt{5})\,(6 + 4\sqrt{5}) =$

A. $-8 + 2\sqrt{5}$ **B.** $8 - 2\sqrt{5}$ **C.** $32 - 14\sqrt{5}$ **D.** $-32 + 14\sqrt{5}$

---

16. $\dfrac{2 - 5\sqrt{2}}{\sqrt{2}} =$

A. $5 - \sqrt{2}$ **B.** $\dfrac{10 - 2\sqrt{2}}{2}$ **C.** $\sqrt{2} - 5$ **D.** $\dfrac{\sqrt{2} - 5}{2}$

---

17. $\dfrac{3 - 4\sqrt{3}}{2 - \sqrt{3}} =$

A. $-6 - 5\sqrt{3}$ **B.** $\dfrac{-6 - 5\sqrt{3}}{7}$ **C.** $18 - 13\sqrt{3}$ **D.** $6 + 5\sqrt{3}$

Year 10

Ratio Rates and Proportion Test

Non Calculator

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. The ratio of boys to girls in a class is 4 : 5. If there are 12 boys in the class, how many students are there in the class?

B : G, Class
4 : 5 : 9
3 ×
12 : 15 : 27 27 students

2. Kristina buys 25 games for her 2 children and divides them in the ratio of their ages, which is 3:2. How many games does the eldest child receive?

Eldest gets $\frac{3}{5}$ of games = $\frac{3}{5} \times 25$
= 15 games.

3. Simon makes 3 litres of lemonade and Ursula makes 1200 millilitres of lemonade. What is the ratio of the amounts of lemonade that they made in simplest form?

3 litres : 1200ml = 3000 : 1200
= 30 : 12 = 5 : 2

4. A concrete mix uses **cement : sand : gravel** in the ratio **6 : 10 : 7** by volume. Kerry has enough cement to fill 9 buckets. How many buckets of sand and gravel will he need?

C : S : G
6 : 10 : 7 15 buckets sand
× 1½ 4 15 10½ 10½ buckets gravel

5. Justin travels a distance of 280 km at an average speed of 80 km/h. How long did the trip take?

$S = \frac{d}{t}$ $t = \frac{d}{S} = \frac{280}{80} = 3.5$
3½ hours for the trip.

6. A car uses fuel at the rate of 9 kilometres/litre. How far could it travel on 40 litres of fuel?

Dist = 9 × 40
= 360km.

7. A combine harvester can cover 4 hectares/hour. How many hours would it take to cover 36 hectares?

Time = $\frac{36}{4}$ = 9 hours

8. Kerrie collects 200 shells on the beach in 4 hours. Express this as a rate in shells per hour.

Rate = 200/4 = 50 shells/hr

9. When a vehicle is moving at a constant speed, the distance travelled (d kilometres) is directly proportional to the time (t hours) that it has been travelling. For a certain vehicle this can be written as $d = 80t$. What is the distance travelled by this vehicle in 7 hours?

$d = 80 \times 7$

$= 560$ km

10. The number of people (N) that can be carried on B buses is given by the equation $N = 60B$. How many buses would be needed to carry 420 people?

$N = 60B$ $\qquad B = 420/60$

$420 = 60B$ $\qquad = 7$ buses

11. When travelling from Bathurst to Lithgow, the time taken (t hours) is inversely proportional to the speed (s km/hour). This can be written as $t = \frac{60}{s}$. What is the time taken when riding a cycle at a speed of 15 km/h?

$t = \frac{60}{15} = 4$ hours

12. The time (T minutes) to cook a meal is inversely proportional to the power (P kilowatts) of the microwave oven. For a frozen dinner, this is given by the equation $T = \frac{15000}{P}$. How long would it take to cook the dinner in a 600 watt microwave?

$T = \frac{15000}{600} = 25$ min

13. The height (h metres) of a tree is directly proportional to the time (t years) since it germinated. If the height after 3 years was 1.5 metres, find the height after 7 years.

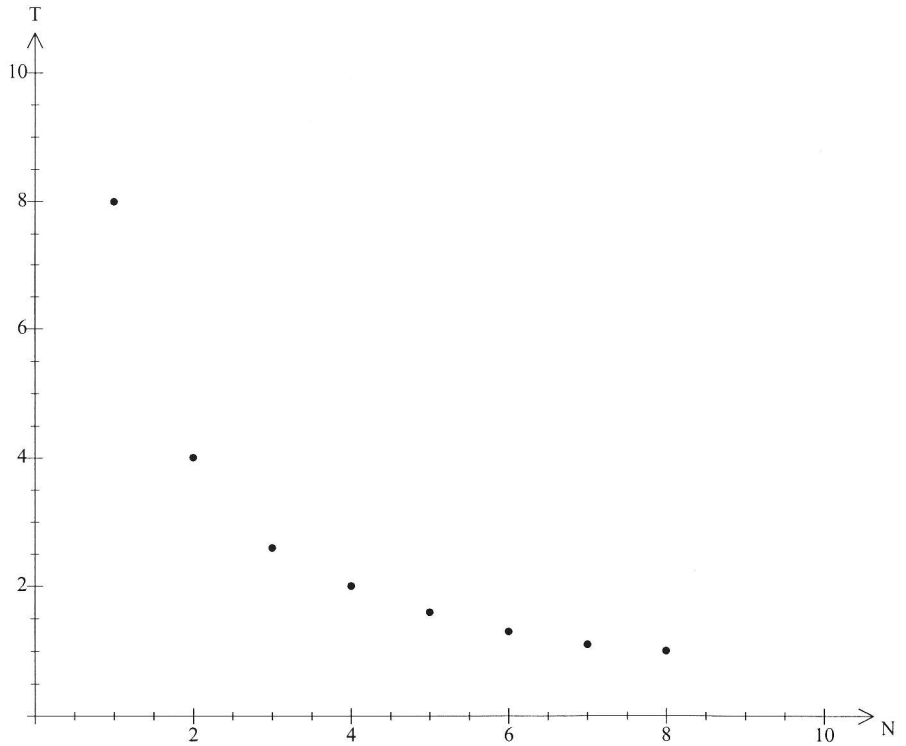
$h = kt$ $\qquad h = 0.5t$

$1.5 = k \times 3$ $\qquad = 0.5(7)$

$k = \frac{1.5}{3} = 0.5$ $\qquad = 3.5$ m.

Questions 14 and 15 refer to the graph below.

The time (T) taken to finish the weekly housework is inversely proportional to the number of people (N) helping out. The graph represents this.



14. How many people are needed to complete the housework in 2 hours?

4 people

15. How many extra hours will the house work take if there are 4 people who normally do the housework, but three of them are away for the week?

2hrs for 4 people 8 hrs for 1 person.
An extra 6 hours.

Ratio Rates and Proportion Test

Year 10

Calculator

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. From a group of 240 students, 100 are at sport and the rest are in class. What is the ratio in simplest terms of those at sport to those in class?

   A. 12 : 5 (B.) 5 : 7 C. 17 : 5 D. 7 : 5

---

2. The rate of flow of water from a dam is 24 kilolitres/hour. How long would it take for 150 kilolitres to flow from the dam?

   (A.) 6 hours and 15 minutes
   B. 6 hours and 25 minutes
   C. 8 hours
   D. 8 hours and 15 minutes

---

3. The directions to mix fertiliser say to add 4 teaspoons of granules to 500 millilitres of water. If each teaspoon holds 4 grams of granules, what is the rate for mixing the fertiliser?

   A. 8 grams/litre
   B. 16 grams/litre
   (C.) 32 grams/litre
   D. 64 grams/litre

---

4. Mike runs 20 laps of the oval per day. If each lap is 500 metres, how many kilometres would he have run in the month of January?

   A. 280 kilometres B. 300 kilometres
   (C.) 310 kilometres D. 620 kilometres

---

5. Mary's car uses 20 litres of fuel to travel 250 km. The consumption rate is:

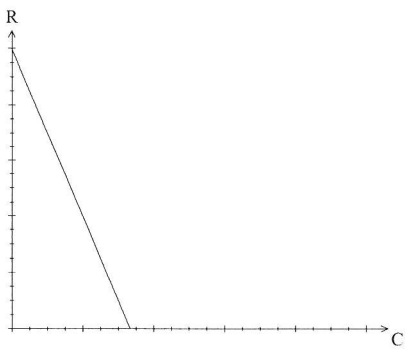
   A. 16 litres per 100 kilometres
   (B.) 8 litres per 100 kilometres
   C. 12.5 litres per 100 kilometres
   D. 25 litres per 100 kilometres

Questions 6 and 7 refer to the information below.

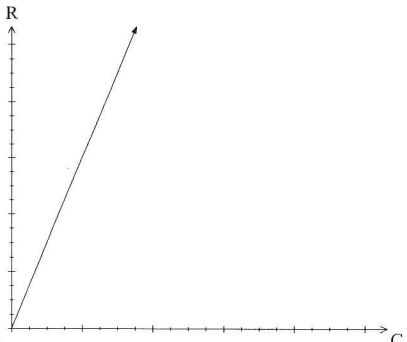
The electrical current in a wire is inversely proportional to the resistance.

6. Which graph could represent the relationship between current (C) and the resistance (R).

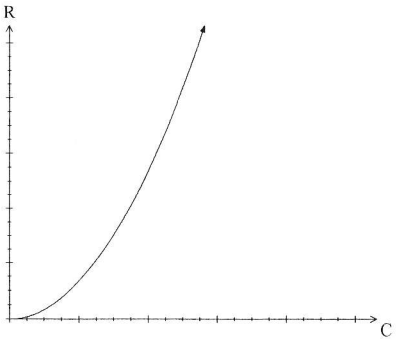
A.



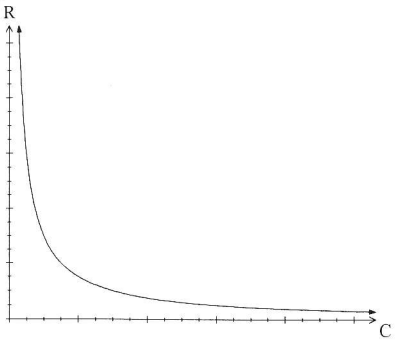
B.



C.



D.



7. If the resistance were doubled, what would be the effect on the current?

A. The current would be doubled.
B. The current would be squared.
C. The current would be halved.
D. The current would stay the same.

8. In a National Park, the ratio of native trees to pine trees is 5 : 1. If there are 3000 native trees how many pine trees are there?

A. 500 B. 600 C. 2 500 D 3 000 .

9. In a test match the ratio of the runs scored by the English to the runs scored by the Australians 16 : 7. If the English scored 368 runs, how many runs were scored by the Australians?

A. 23 runs B. 112 runs C. 161 runs D. 529 runs

10. Janis and Hannah share their earnings from odd jobs in the ratio 4 : 5. If they earned a total of $108.00 on a weekend, how much would Hannah get as her share?

A. $21.60 B. $27.00 C. $48.00 D. $60.00

12. Marty calculates that his bicycle travels at 5 metres per second. What is this speed in kilometres per hour?

A. 180 km/h (B.) 18 km/h C. 1.4 km/h D. 0.3 km/h

13. John gives $\frac{1}{8}$ of his wage to charity. The ratio of the amount he gives to charity compared to the amount he has remaining is:

A. 1 : 8 B. 8 : 1 (C.) 1 : 7 D. 7 : 1

14. The ratio of flour to sugar in a recipe is 8 : 3. If I have 20 cups of flour, how much sugar should I use?

A. $9\frac{1}{2}$ cups (B.) $7\frac{1}{2}$ cups C. 10 cups D. 8 cups

15. When we divide 2 hours in the ratio 7 : 5, the result is. :

(A.) 70 min : 50 min B. 50 min : 70 min

B. 35 min : 25 min D. 14 min : 10 min

16. A two metre length of wood costs $ 6.40. What would be the cost of a piece that was 2.5 metres in length?

(A.) $8.00 B. $10.24 C. $32 D. $9.60

Index Laws Test Non Calculator

Year 9

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Simplify $8a^4 \times 5a^7 =$

$40a^{11}$

2. Simplify $\frac{24m^7}{3m^2} =$

$8m^5$

3. Simplify $5s^3t^5 \times 7st^7 =$

$35s^4t^{12}$

4. Simplify $(v^3)^5 =$

v^{15}

5. Simplify $\frac{16p^3q^5}{2p^2q^3} =$

$8pq^2$

6. Simplify $(3a^3b^2)^2 =$

$9a^6b^4$

7. Write $m^{\frac{1}{2}}$ without using an index.

$m^{\frac{1}{2}} = \sqrt{m}$

8. Evaluate $36^{\frac{1}{2}}$

$36^{\frac{1}{2}} = \sqrt{36}$

$= 6$

9. Write p^{-1} without using an index.

$p^{-1} = \frac{1}{p}$

10. Evaluate 8^{-2}

$8^{-2} = \frac{1}{8^2}$

$= \frac{1}{64}$

11. Evaluate $32^{\frac{3}{5}}$

$32^{\frac{3}{5}} = \sqrt[5]{32^3}$

$= 8$

12. Simplify $(4a^6 \times 2a^3)^{\frac{1}{3}} =$

$(8a^9)^{\frac{1}{3}} = 2a^3$

13. Write 2.4×10^5 as a numeral without using standard notation.

240 000

14. Write 3.26×10^{-3} without using standard notation.

0.00326

15. Write 0.000456 using standard notation.

4.56×10^{-4}

16. Which is largest 2.45×10^{6}, 258 000 or 1.25×10^{7} ?

2450 000 258 000 12500 000

↑ Largest.

17. The distance to space probe Alpha is 4.2×10^{10} km. A second probe, Beta is half as far away. Write the distance to probe Beta without using Standard Notation.

$4.2 \times 10^{10} = 2.1 \times 10^{10}$

$= 21\,000\,000\,000$ km

Year 9

Index Laws Test Calculator

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. $4x^2 \times 6x^3 =$

A. $24x^5$ **B.** $10x^5$ **C.** $24x^6$ **D.** $10x^6$

---

2. $\frac{36x^5}{4x^3} =$

A. $32x^2$ **B.** $9x^3$ **C.** $9x^2$ **D.** $32x^3$

---

3. $4x^2 \times 5xy =$

A. $20x^2y$ **B.** $9x^3y$ **C.** $9x^2y$ **D.** $20x^3y$

---

4. $2x^3y \times -2xy^2 =$

A. $-4x^4y^3$ B. $4x^4y^3$ C. $-4x^3y^2$ D. $4x^3y^2$

---

5. $(3x^3)^2 =$

A. $6x^6$ **B.** $9x^6$ **C.** $9x^5$ **D.** $6x^5$

---

6. The fraction $\frac{12a^4b^8}{3a^7b^6}$ simplifies to:

A. $\frac{4a^3}{b^2}$ **B.** $\frac{4b^2}{a^3}$ **C.** $4a^3b^2$ **D.** $\frac{b^2}{4a^3}$

---

7. $(4x^2y)^2 =$

A. $4x^2y^2$ **B.** $16x^2y^2$ **C.** $8x^4y^2$ **D.** $16x^4y^2$

---

8. $a^{\frac{1}{2}} =$

A. $\frac{a}{2}$ **B.** $\frac{1}{a}$ **C.** a^2 **D.** $\sqrt{a}$

---

9. $3^{-2} =$

A. $\frac{1}{3}$ **B.** 9 **C.** $\frac{1}{9}$ **D.** $\frac{1}{6}$

10. $100^{\frac{1}{2}} =$

A. 50 **B.** 10 **C.** 10 000 **D.** 20

11. $y^{-\frac{1}{3}} =$

A. $\frac{y}{3}$ **B.** $\frac{1}{\sqrt[3]{y}}$ **C.** $\sqrt[3]{y}$ **D.** $-\frac{y}{3}$

12. $27^{-\frac{2}{3}} =$

A. –9 **B.** –3 **C.** $\frac{1}{9}$ **D.** $\frac{1}{3}$

13. $4.6 \times 10^5 =$

A. 460 **B.** 46 **C.** 460 000 **D.** 4 600 000

14. 0.0034 when written in standard notation is :

A. 3.4×10^{-4} **B.** 34×10^{-3} **C.** 34×10^{-4} **D.** 3.4×10^{-3}

15. $(16a^{16}b^4)^{\frac{1}{2}} =$

A. $4a^8b^2$ **B.** $8a^8b^2$ **C.** $4a^4b^2$ **D.** $8a^4b^2$

16. $(8a^{12}b^6)^{-\frac{2}{3}} =$

A. $-4a^8b^4$ **B.** $\frac{1}{4a^8b^4}$ **C.** $\frac{16}{3a^4b^2}$ **D.** $\frac{3}{16a^4b^2}$

17. $\frac{4y^6}{3x^6} \times \frac{6x^{12}}{y^2} =$

A. $8x^6y^4$ B. $21x^6y^4$ C. $8x^2y^3$ D. $21x^2y^3$

Earning and Spending Test

~~Non~~ Calculator

Year

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Tarnya is currently paid $945.40 per fortnight. Her employer decides to pay her on a weekly basis. If her annual salary remains unchanged, what is her weekly pay?

Weekly = 945·40 ÷ 2

= $472·70

2. Ursula buys 0.6kg of potatoes at $1.25 per kg. What will this cost her?

1.25 x 0·6 = $0·75

3. Darlene is paid casual rates of $12.40 per hour. What would she earn in a week where she works for 50 hours?

12·40 x 50 = $620

4. Kasey buys 7 markers for $1.55 each. What change would she get from $20.00?

7 x 1·55 x 10·85

Change = 20 - 10·85 = $9·15

5. Soap powder is sold in three different sizes. Which is the best buy?

	(a)	750g for $3.30	4·40/kg
	(b)	1kg for $4.30	4·30/kg
or	(c)	1.25kg for $5.00	4·00/kg

(c) is best at $4·00 per kg

6. Lena is paid $18.70 for a regular hour's work. Find Lena's pay if she works 8 hours at normal rates plus 4 hours overtime at time and a half on the same day.

4hrs at time & ½ = 6hrs normal rate

Total = 8+6 = 14hrs Pay = 14 x 18·7 = $261·80.

7. Hamish is paid for picking fruit. The rate is $21.00 per hundred kilograms. What does he earn for a day when he picks 45 baskets with an average weight of 20 kg?

$45 \times 20\,kg = 900\,kg = 9 \times 100\,kg$

$Pay = 9 \times 21 = \$189.00$

8. Adam is paid a retainer of $180 per week plus a commission of 6% of his sales. What is his pay in a week where his sales were $12 500?

$Commission = 12500 \times 0.06 = \$750$

$Pay = 750 + 180 = \$930.$

9. Jo is paid a commission of 5% on her sales. What were her sales last week if she was paid $1 500.00?

5% of sales $= \$1\,500$

1% of sales $= \$300$

100% of sales $= 30\,000$

Earning and Spending Test Calculator

Year

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. Michael is paid at a rate of $15.54 per hour. What would he earn in a week where he worked 32 hours?

   A. $47.54 B. $466.20 C. $485.63 D. $497.28

---

2. Keiren works as a teller in a bank and is paid a salary of $ 44 408.00. What is her weekly pay?

   A. $854.00 B $1 708.00 C. $1 850.00 D. $3 700.00

---

3. Leanne works in a shop where her wage is $24.50 per hour. She has 24% of her wage deducted for PAYG tax. What is her net pay in her normal week when she works 35 hours?

   A. $205.80 B. $651.70 C. $833.50 D. $1 063.30

---

4. Tarax brand of soft drink is available in the following packaging. Which is the best value?

   A. 2 litre bottle for $2.50.
   B. 1.25 litre bottle for $1.50
   C. 600 ml bottle for $1.20
   D. 4 pack of 300 ml bottles for $2.20

---

5. John's normal hourly rate of pay is $16.54. He works 8 hours overtime at time and a half. What would he be paid for this overtime?

   A. $198.48 B. $132.32 C. $24.81 D. $26.04

---

6. Josiah works in sales at Kellytown Real Estate. He is paid a retainer of $250.00 per week, and a commission of 0.5% of his sales. Last week his sales totalled $408 000.00. What was his pay for the week?

   A. $2 290 B. $20 650
   C. $2 040 D. $20 400

---

7. Peta works at the Wmart supermarket, and is paid normal rates of $10.40 per hour for a 36 hour week. She is paid time and a half for overtime. What would she earn in a week where she worked for 44 hours?

A. $457.60 B. $386.40 C. $686.40 D. $499.20

---

8. Steven is on a net annual salary of $35 841. If he is paid fortnightly, his pay cheque would be nearest to:

A. $ 98.46 B $ 689.25 C $ 1 378.50 D. $ 2 986.75

---

9. Marjorie is paid $20.50 per hour for normal hours and double time for overtime. What is her pay if she works 35 hours at normal rates and 6 hours overtime?

A. $4 317.00 B. $1 459.00 C. $963.50 D. $729.50

---

10. Jack is paid a commission of 15% of all his sales plus a regular salary of $215.00 per week. What would he earn in a week where his sales were $6 000.00?

A. $6 015.25 B. $1 115.00 C. $6 215.00 D. $915.25

---

11. Sam is paid $612.50 for 35 hours of work. How many hours has he worked if he is paid $490?

A. 28 hours B. 14 hours C. $17\frac{1}{2}$ hours D. 43.75 hours

---

Year 10

Compound Interest and Consumer Maths Test

Calculator Section

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Danni buys the car advertised on terms over 4 years.

   How much more does it cost her than if she had paid cash for the car?

New Arresta Hatchback
Cash Price $ 35 000
Or
Pay $4 000 deposit and $240 per week for 4 years

$4000 + 240 × 52 × 4 = $53 920

Extra = $18 920

2. A principal of $45 000 is invested at 5% pa interest compounded annually. Find the value of the investment after 4 years.

$A = P(1+r)^n = 45\,000\,(1.05)^4$

3. Karen buys a lounge on terms over 3 years and pays a total of $3 100. If the cash price of the lounge was $2 500, what rate of simple interest did she pay, per annum?

Int = 3100 − 2500 = $600

$I = PRN \quad 600 = 2500 \times R \times 3 \quad R = \frac{600}{2500} = 0.08 = 8\%$

4. Layla borrows $24 000 from her father to buy a car and repays the full amount plus interest after 2 years. If the interest is charged at 4% pa, compounded quarterly, how much does she need to repay?

4% pa = 1% per quarter 2 yrs = 8 quarters

$A = 24\,000\,(1.01)^8 = \$25\,989$

5. Henri has $30 000 invested in a term deposit for 3 years. The interest rate is 8% pa compounded half yearly. How much interest will Henri be paid at the end of the 3 years?

8% pa = 4% per half yr 3 yrs = 6 half yrs

$A = 30\,000\,(1.04)^6$

$= 37\,960$ Interest = $7 960 (nearest $)

6. Marco deposits $3 500 into a savings account on the 1st January. The account earns interest at the rate of 9% pa compounding monthly. If he makes no deposits or withdrawals for 6 months, how much will be in his account on the 1st July?

Monthly rate = 0·75%

$A = 3500(1.0075)^6$

$= \$3660.48$

7. Angela bought a new car for $34 000 four years ago. If the car depreciates at 8% pa compounding annually, what is the value of the car today?

$V = 34\,000(1-0.08)^4$

$= 34\,000(0.92)^4 = \$24\,357$

8. Franz has $3 000 to invest for 2 years. He visits the two local banks. The River Bank offers a rate of 9% pa compounded monthly and the Stream Bank offers 9.1% pa compounded half yearly. Which investment would earn him the most interest in 2 years?

River $= 3000(1.0075)^{24} = 3\,589.24$

Stream $= 3000(1.0455)^4 = 3\,584.41$

The River earns more.

COMPOUND INTEREST

Financial Maths Test Calculator

Year 10

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

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1. A man buys a car priced at $5000 by paying a 10% deposit and then 52 weekly payments of $95. How much does he pay for the car, altogether?

A $5 000 B $5 500 (C) $5 440 D $5 450

---

2. A microwave oven is advertised as shown.

Cash Price $450
or
$45 deposit and $40 per month for 12 months

How much extra is paid by paying it off over 12 months, compared to the cash price?

A. $30 (B.) $75 C. $480 D. $525

---

3. Marcie's car loan repayments increased from $96.00 to $120.00 per fortnight. How much extra will Marcie repay each year?

A. $288.00 B $600.00 (C) $624.00 D. $1 248.00

---

4. Kelly pays off a loan of $1 500 with repayments of $105.00 per month over 2 years. How much does she pay in total in interest?

A. $240.00 (B.) $1 020.00 C. $1 230.00 D. $3 960.00 .

---

5. An artist is paid a royalty of 4% on sales of his prints. What does he earn in a week where sales of prints total $13 000.

A. $52.00 B $104.00. (C.) $520.00 D. $1400.00

---

6. Ursula invests $20 000 at 5% p.a. interest, compounding annually. What is her investment worth at the end of 3 years?

(A.) $2315.25 B. $2 300.00 C. $21 00.00 D. $315.25

---

7. Fernando borrows \$2 500 at 8% p.a. interest, compounding quarterly. What does he owe at the end of 1 year if he has made no repayments?

A. \$2706 B. \$2704 C. \$2700 D. \$706

---

8. Which calculation would you use to find the interest on \$5 000 invested at 6% p.a. interest compounding monthly for a year.

A. 5000×1.05^{12} B. 5000×1.005^{12} C. 5000×1.02^{12} D. 5000×1.002^{12}

Basic Number Skills Test Non Calculator

Year 9

Short Answer Section

Name : _____

Write all working and answers in the spaces provided on this test paper.

1. Find 40% of \$120.

$0.4 \times 120 = \$48$

2. When a 300 m^3 pile of sand is divided into 2 piles, in the ratio 5 : 1, what is the volume of the larger pile?

$300 \div 6 = 50$ $\quad 5 \times 50 : 1 \times 50$

Larger pile $= 250 m^3$

3. Find $\frac{5}{8}$ of \$104.

$\frac{5}{8} \times 104^{13} = 5 \times 13 = \$65$

4. Write the numbers, 1.2, 1.002, $1\frac{1}{2}$ and $1\frac{1}{4}$ in descending order.

$1\frac{1}{2}$, $1\frac{1}{4}$, 1.2, 1.002

5. Jackson spends \$4 from his allowance of \$25. What percentage of his allowance has he got left?

$\frac{21}{25} \times 100 = 84\%$ remaining

6. Find the value of $2 \times 6 + (18 - 7) \times 3$?

$12 + (11) \times 3 = 12 + 33$

$= 45$

7. Write the number $\frac{17}{20}$ as a decimal.

$\frac{17}{20} \times \frac{5}{5} = \frac{85}{100} = 0.85$

8. What is 48% as a fraction in simplest form?

$\frac{48}{100} = \frac{12}{25}$

9. Given that $61 \times 4 = 244$, what is the value of $0.61 \times 0.04 =$

$61 \times 4 = 244$

$0{\cdot}61 \times 0{\cdot}04 = 0{\cdot}0244$

10. Simplify the ratio 25 centimetres : 1.5 metres

$25\text{cm} : 150\text{cm} = 1 : 6$

11. The value of $\frac{8}{\square}$ lies between 0.2 and 0.5. What value could $\square$ take?

$\frac{2}{10} = \frac{8}{40}$ & $\frac{5}{10} = \frac{8}{16}$

$\square$ can be between 16 and 40

12. Find the value of $\frac{4}{5} \times \frac{5}{8}$ in simplest form.

$\frac{1}{\cancel{4}_{5}} \times \frac{\cancel{5}^{1}}{\cancel{8}_{2}} = \frac{1}{2}$

Basic Number Skills Test

Year 9

Calculator

Multiple Choice Section

Name : _____

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

1. Which set of numbers is arranged in ascending order?

   A. 0.5, 5, 0.005, 5.5 B. 5, 0.005, 5.5, 0.5
   C. 0.005, 0.5, 5, 5.5 D. 5.5, 5, 0.5, 0.005,

---

2. Which of the following is not the same as 24.5%

   A. $\frac{245}{1000}$ B. 0.245 C. $\frac{49}{200}$ D. $2\frac{9}{20}$

---

3. When 45 398 km is rounded to 3 significant figures, the result is;

   A. 50 000 B. 45 000 C. 45 300 D. 45 400

---

4. The product of $\frac{2}{5}$ and $\frac{3}{4}$ is:

   A. $\frac{3}{10}$ B. $1\frac{3}{20}$ C. $\frac{7}{20}$ D. $\frac{8}{15}$

---

5. Ken and Leo invest money in their business in the ratio 5 : 7 respectively. They divide their profits in the same ratio. If the profits for one year were $192 000, how much would Leo receive?

   A. $112 000 B. $268 800 C. $16 000 D. $80 000

---

6. Naomi is a teacher and she asks her class about the number of vehicles their families own. She finds that $\frac{2}{5}$ of her class has one car, $\frac{3}{10}$ has two cars and $\frac{1}{4}$ has more than two cars. What fraction of the class has no car?

   A. $\frac{1}{10}$ B. $\frac{1}{20}$ C. $\frac{19}{20}$ D. $\frac{1}{5}$

---

7. Quentin, Ryan and Sally find that their ages are in the ratio 4 : 5 : 11. Sally is 55 years old. What is the difference between Quentin's and Ryan's ages?

   A. 1 year B. 5 years C. 6 years D. 10 years

---

8. $0.24 \times \square = 0.12$

The missing number in the sentence above is :

A. 5 B. 0.5 C. 0.05 D. 2

---

9. The result to 0.237×5.7 when rounded to three decimal places is:

A. 1.3509 B. 1.350 C. 1.351 D. 1.35

---

10. 0.0023456 rounded to 2 significant figures is

A. 0.00 B. 0.002 C. 0.0023 D. 0.0024

---

11. Which does not have the same value as $\frac{11}{10}$?

A. $1\frac{1}{10}$ B. 1.1 C. $-\frac{10}{11}$ D. $\frac{22}{20}$

---

12. The ratio 28 : 40 in simplest form is :

A. 14 : 20 B. 7 : 10 C. 3.5 : 5 D. 56 : 80

---

13. Hannah saves 40% of her pay from her weekend job for her future university fees. If she saves $48, what was her pay?

A. $120 B. $88 C. $83 D. $192
