

Name: Key

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- b 1. If \$50 was invested for 6 months in an account that offered an interest rate of 10%/yr, how much interest was earned?

- a. \$1.00
- b. \$2.50
- c. \$25.00
- d. \$5.00

$$I = Prt$$
$$I = 50(0.1)(0.5)$$
$$I = \$2.50$$

- b 2. Rob wishes to purchase a used car, which will cost him \$4500. He currently has \$4200, and will invest all of this money into an account with an interest rate of 10%/yr. For how long will he have to invest his money until he has an amount of \$4500? Round up.

- a. 7 months
- b. 9 months
- c. 10 months
- d. 8 months

$$I = P - R \quad t$$
$$300 = 4200(0.1)t$$
$$300 = 420t$$
$$t = \frac{300}{420} \quad t = 0.714 \text{ yrs}$$
$$t = 8.57 \text{ months} \quad \textcircled{9}$$

- b 3. Harry is a plumber from Edmonton, who would like to take on an apprentice. To do so, he invests \$4000 into a savings account which earns 5%/yr, compounded annually. How much interest will he earn after 2 years?

- a. \$420.00
- b. \$410.00
- c. \$408.00
- d. \$400.00

$$A = P(1+r)^n$$
$$A = 4000\left(1 + \frac{0.05}{1}\right)^2$$
$$4410 = A$$
$$I = 4410 - 4000$$
$$I = \$410$$

c 4. James collected data with a range of 564. If he wishes to make a histogram, and wants to use 75 for the width of each interval, how many intervals will he need?

- a. 10
- b. 9
- c. 8
- d. 7

$$\begin{aligned} 564 \div 75 \\ = 7.52 \\ = 8! \end{aligned}$$

a 5. The following table shows data collected about the square foot measurements of houses in Edmonton.

Square Foot Measurements of Houses							
1049	1253	1785	1852	2670 ¹	1067	1154	1698
2430	2045	1500	1620	3040	1600	1869	1259
1348	1300	1420	1204	1545	2163	1357	1145
1469	1365	1364	1520	1570	1023	2200	1206

What is the frequency in the interval 2500-3000?

- a. 1
- b. 4
- c. 2
- d. 3

a 6. Patrick is creating a circle graph associated with his budget. He spent $\frac{1}{3}$ of his income on non-necessities. What is the central angle of this section of the circle graph?

- a. 120
- b. 60
- c. 45
- d. 90

C 7. A cylinder has radius of 5 cm and a height of 40 cm. What is its surface area?

- a. 141 cm^2
- b. 707 cm^2
- c. 1414 cm^2
- d. 71 cm^2

$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi(5)^2 + 2\pi(5)(40) \\ &= 157.08 + 1256.6 \\ &= 1414 \text{ cm}^2 \end{aligned}$$

b 8. What is the lateral area of a cone with a base radius of 10 cm and a slant height of 7.5 cm?

- a. 314 cm^2
- b. 236 cm^2
- c. 118 cm^2
- d. 75 cm^2

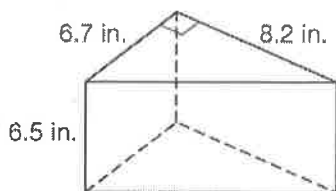
$$\begin{aligned} &\pi r s \\ &= \pi(10)(7.5) \\ &= 236 \end{aligned}$$

a 9. A sphere has a radius of 15 cm. What is the sphere's surface area, to the nearest square centimetre?

- a. 2827 cm^2
- b. 707 cm^2
- c. 1587 cm^2
- d. 188 cm^2

$$\begin{aligned} &4\pi r^2 \\ &= 4\pi(15)^2 \\ &= 2827 \end{aligned}$$

b 10. What is the volume of this prism, to the nearest cubic inch?



- a. 43.87 in^3
- b. 178.56 in^3
- c. 65.89 in^3
- d. 29.59 in^3

$$\begin{aligned} &\frac{6.7 \times 8.2}{2} \times 6.5 \\ &= 178.6 \end{aligned}$$

a 11. Determine the volume of a sphere with radius of 19 cm.

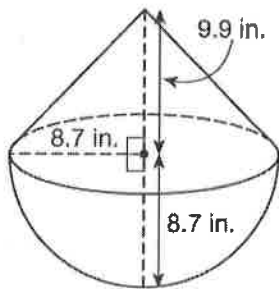
- a. 28 731 cm^3
- b. 71 823 cm^3
- c. 13 782 cm^3
- d. 32 178 cm^3

$$V = \frac{4}{3} \pi r^3$$

$$V = \frac{4}{3} \pi (19)^3$$

$$V = 28731$$

b 12. What is the volume of the given object, to the nearest cubic inch?



- a. 1642 cu in.
- b. 2164 cu in.
- c. 6421 cu in.
- d. 4216 cu in.

$$\frac{\pi r^2 h}{3} + \frac{4}{3} \pi r^3 \div 2$$

$$\pi (8.7)^2 (9.9) + \frac{4}{3} \pi (8.7)^3 \div 2$$

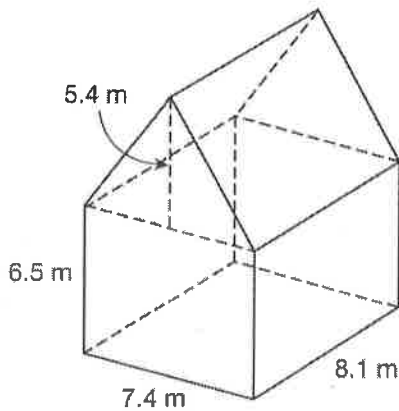
$$\frac{2354.1 + 1379.2}{3}$$

$$784.7 + 137.9$$

$$2164$$

a

13. What is the volume of the given object, to the nearest cubic metre?

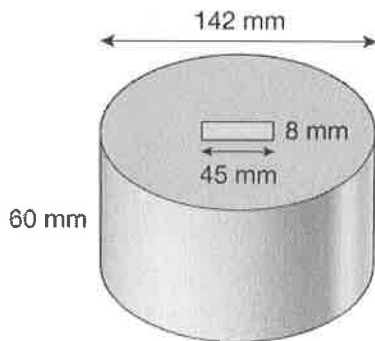


$$\begin{aligned} V_{\text{total}} &= V_{\text{box}} + V_{\text{prism}} \\ &= 6.5 \times 7.4 \times 8.1 + \frac{7.4 \times 5.4}{2} \times 8.1 \\ &= 389.6 + 161.8 \\ &= 551 \end{aligned}$$

- a. 551 m³
- b. 356 m³
- c. 384 m³
- d. 557 m³

d

14. A cylinder has a rectangular hole punched through it. What is the volume of this composite object, to the nearest cubic centimetre?



$$\begin{aligned} \pi r^2 h - l \cdot w \cdot h \\ \pi (71)^2 (60) - 45 \cdot 8 \cdot 60 \\ 950206.1 - 21600 \\ 928606.1 \text{ mm}^3 \end{aligned}$$

- a. 921 cm³
- b. 795 cm³
- c. 854 cm³
- d. 929 cm³

929

15. Leanne received a credit card statement that has a new balance of \$1002.61 and a minimum payment of \$49.80. The annual percent rate is 17% compounded daily and charged on the unpaid balance. Leanne makes only the minimum payment. She makes no other purchases. How much interest will Leanne be charged on the next statement in 31 days?

- a. \$13.85
b. \$161.98
c. \$966.66
d. \$15.90

$$1002.61 - 49.80 = 952.81$$

$$= 966.66 - 952.81$$

$$I = A - P \quad \$13.85$$

$$A = P(1+r)^n$$

$$A = 952.81 \left(1 + \frac{0.17}{365}\right)^{31}$$

$$966.66 = A$$

16. Eddie is lending Mo \$400 to buy a laptop. Eddie charges simple interest at 5%/yr. At the end of 2 years, Mo will repay Eddie. How much will Mo owe?

- a. \$440
b. \$400
c. \$40
d. None of the above.

$$I = Prt$$

$$I = 400(0.05)(2)$$

$$I = 40$$

$$40 + 400 = \$440$$

17. Song is paying her \$30 000 student loan. The interest rate is 5.64%/yr. It is compounded daily and payable monthly. In her first payment, Song will pay the interest owing. She will also pay an extra \$500 of the principal. What is Song's first payment for the interest plus the extra \$500? (assume 30 days in a month)

- a. \$639.38
b. \$639.35
c. \$639.40
d. \$639.42

$$A = P(1+r)^n$$

$$A = 30000 \left(1 + \frac{0.0564}{365}\right)^{30}$$

$$A = 30139.38$$

$$I = 139.38 + 500 = 639.38$$

9 18. Marilyn is an interior designer. She wants to buy a vintage sofa for \$1200 and will pay the \$400 fee to have it reupholstered. She saves 7% if she uses her store credit card. What will Marilyn save if she uses the store credit card?

- a. \$112
- b. \$120
- c. \$108
- d. \$114

$$0.07 \times 1600$$

C 19. Riley is a truck driver, who is rarely able to go to his bank at home. On average, Riley uses an ATM 4 times a week, and he is charged \$2.55/transaction. If Riley only wanted to spend \$125 on ATM transactions, how many transactions could he make?

- a. 25
- b. 31
- c. 49
- d. 78

$$\frac{125}{2.55} \quad 49$$

a 20. In the month of May, Katherine earned \$5000 and paid \$2500 in fixed expenses and \$2400 in variable expenses. What was her surplus or deficit for May?

- a. surplus of \$100
- b. surplus of \$1000
- c. deficit of \$100
- d. deficit of \$1000

$$100$$

b 21. Select the lowest terms for the ratio $-40 : 15$.

- a. $-4 : 3$
- b. $-8 : 3$
- c. $-3 : 5$
- d. $-7 : 2$

$$\begin{array}{l} \div 5 \quad \div 5 \\ \hline -8 : 3 \end{array}$$

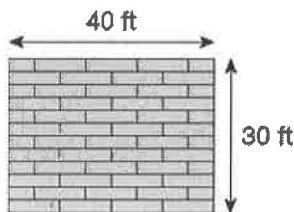
d 22. Megan is a limousine driver who often needs to read a map. The map she is currently looking at has a scale of 1 cm to 7 km. What is the scale ratio of this map?

- a. $1 : 7\,000$
- b. $1 : 7\,000\,000$
- c. $1 : 7$
- d. $1 : 700\,000$

$$\frac{1\text{ cm}}{7\text{ km}} = \frac{1\text{ cm}}{7000\text{ m}} = \frac{1\text{ cm}}{700000\text{ cm}}$$

$$1 : 700000$$

a 23. Julie is a builder. She plans to construct a patio at a community centre, shown here. What are the dimensions of a scale diagram drawn using a scale of $1 : 120$?



$$40 \times 12 = \frac{480\text{ in}}{120}$$

$$l = 4\text{ in}$$

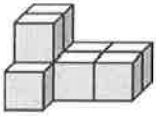
- a. Length is 4 in., width is 3 in.
- b. Length is 16 in., width is 14 in.
- c. Length is 4 ft, width is 3 ft
- d. Length is 0.5 in., width is 0.38 in.

$$30 \times 12 = \frac{360\text{ in}}{120}$$

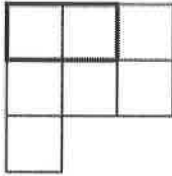
$$w = 3\text{ in}$$

b

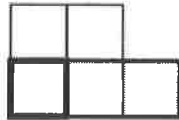
24. Which set of orthographic drawings correctly represents the following structure?



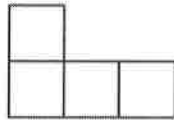
a.



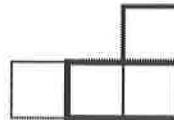
top



front

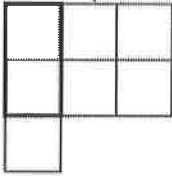


left side

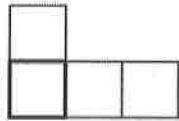


right side

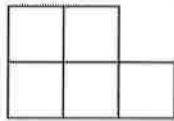
b.



top



front

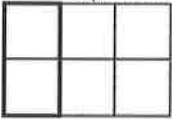


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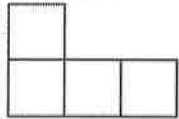


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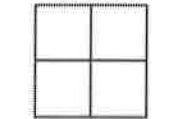
c.



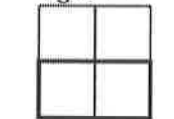
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front



left side

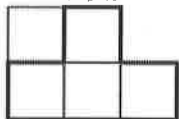


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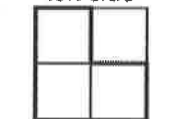
d.



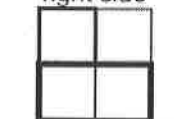
top



front



left side



right side

d 25. Ashika collects model toy cars, which are built using a 1:64 scale. One model of a convertible is 10.2 cm long, and 3.6 cm wide. How long is the actual car?

- a. 6.7 m
- b. 6.8 m
- c. 6.6 m
- d. 6.5 m

$$l = 10.2 \times 64 = \frac{652.8 \text{ cm}}{100}$$

$$6.5 \text{ m}$$

Practice Final Exam Answer Section

MULTIPLE CHOICE

- ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 1.1
OBJ: N3.1 | A1.1 | A1.3 | A1.4 | A1.6 | 11E3.I.1 | 11E3.I.3
TOP: Understanding simple interest KEY: simple interest | principal | amount
- ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 1.2
OBJ: N3.1 | A1.1 | A1.2 | A1.3 | A1.4 | A1.5 | 11E3.I.1 | 11E3.I.3
TOP: Simple interest problems KEY: simple interest | principal | amount
- ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 1.3
OBJ: N3.1 | N3.2 | N3.3 | A1.1 | A1.4 | 11E3.I.1 | 11E3.I.3
TOP: Understanding compound interest KEY: compound interest | principal | amount
- ANS: C PTS: 1 DIF: Grade 11 REF: Lesson 2.2
OBJ: S1.1 | S1.2 | S1.3 | S1.5 | S1.7 | 11E3.S.1 TOP: Histograms
KEY: trend | frequency table | histogram
- ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 2.2
OBJ: S1.1 | S1.2 | S1.3 | S1.5 | S1.7 | 11E3.S.1 TOP: Histograms
KEY: trend | frequency table | histogram
- ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 2.5
OBJ: S1.1 | S1.2 | S1.7 | 11E3.S.1 TOP: Circle graphs
KEY: central angle | circle graph
- ANS: C PTS: 1 DIF: Grade 11 REF: Lesson 3.1
OBJ: M1.2 | M1.6 | A1.1 | A1.3 | A1.5 | 11E3.G.1 | 11E3.G.3
TOP: Relating nets to surface area KEY: surface area | net
- ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 3.3
OBJ: M1.2 | M1.6 | A1.2 | A1.5 | 11E3.G.1 | 11E3.G.3 TOP: Surface area: pyramids and cones
KEY: surface area | slant height | lateral area
- ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 3.4
OBJ: M1.2 | M1.6 | A1.1 | A1.2 | A1.3 | A1.6 | 11E3.G.1 | 11E3.G.3
TOP: Surface area: spheres KEY: surface area
- ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 4.1
OBJ: M1.1 | M2.1 | M2.5 | M2.7 | M2.11 | M2.13 | M2.14 | A1.1 | A1.2 | A1.3 | A1.5 | 11E3.G.1 | 11E3.G.2 | 11E3.G.3
TOP: Volume: prisms, cylinders, pyramids, and cones
KEY: height | radius | area
- ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 4.2

- OBJ: M2.5 | M2.7 | M2.13 | M2.14 | A1.1 | A1.2 | A1.3 | A1.6 | 11E3.G.2 | 11E3.G.3
TOP: Volume: spheres KEY: radius
12. ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 4.3
OBJ: M2.5 | M2.7 | M2.8 | M2.13 | A1.1 | 11E3.G.2 | 11E4.R.3
TOP: Volume: composite objects KEY: composite object
13. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 5.1
OBJ: N3.3 | N5.1 | N5.2 | N5.3 | N5.4 | N5.5 | A1.1 | 11E3.I.1 | 11E3.I.2 | 11E3.I.3
TOP: Credit cards KEY: credit
14. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 5.2
OBJ: N3.1 | N3.2 | N3.3 | N5.1 | N5.2 | N5.3 | N5.5 | A1.1 | 11E3.I.1 | 11E3.I.2 | 11E3.I.3
TOP: Loans KEY: equity
15. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 5.2
OBJ: N3.1 | N3.2 | N3.3 | N5.1 | N5.2 | N5.3 | N5.5 | A1.1 | 11E3.I.1 | 11E3.I.2 | 11E3.I.3
TOP: Loans KEY: equity
16. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 5.4
OBJ: N3.3 | N5.2 | N5.3 | N5.4 | N5.5 | N5.6 | A1.1 | 11E3.I.1 | 11E3.I.2 | 11E3.I.3
TOP: Sales promotions KEY: credit card | savings
17. ANS: C PTS: 1 DIF: Grade 11 REF: Lesson 6.1
OBJ: A1.1 | A1.3 | A1.4 | A2.1 | A2.2 | A2.4 | A2.5 | A2.7 | 11E4.R.3 | 11E4.R.1
TOP: Slope KEY: slope | rise | run | pitch
18. ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 6.2
OBJ: A1.1 | A1.2 | A1.3 | A2.1 | A2.2 | A2.4 | A2.7 | 11E4.R.3 | 11E4.R.1
TOP: Comparing slope KEY: slope | ratio | pitch
19. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 6.3
OBJ: A1.1 | A2.1 | A2.2 | A2.3 | A2.7 | 11E4.R.3 | 11E4.R.1 TOP: Vertical and horizontal lines
KEY: slope | vertical | horizontal
20. ANS: D PTS: 1 DIF: Grade 11 REF: Lesson 6.3
OBJ: A1.1 | A2.1 | A2.2 | A2.3 | A2.7 | 11E4.R.3 | 11E4.R.1 TOP: Vertical and horizontal lines
KEY: slope | vertical | horizontal
21. ANS: B PTS: 1 DIF: Grade 11 REF: Lesson 7.2
OBJ: G3.1 | G3.2 | G3.3 | G3.5 | G3.6 | 11E4.D.1 TOP: Different views of objects
KEY: isometric drawing | orthographic drawing
22. ANS: D PTS: 1 DIF: Grade 11 REF: Lesson 7.5
OBJ: G2.1 | G2.2 | G2.5 | 11E4.R.4 TOP: Understanding scale
KEY: scale ratio | scale factor
23. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 8.7
OBJ: N2.1 | N2.2 | N2.3 | N2.5 | N2.6 | 11E4.M.1 TOP: Budgets and technology
KEY: expenses | fixed | variable | recurring | deficit | surplus | spreadsheets

24. ANS: C PTS: 1 DIF: Grade 11 REF: Lesson 9.5
OBJ: G1.1 | G1.2 | G1.3 | G1.4 | G1.5 | 11E4.TG.1 TOP: Solving 3-D triangle problems
KEY: legs | ratios
25. ANS: A PTS: 1 DIF: Grade 11 REF: Lesson 9.1
OBJ: G1.3 | G1.4 | 11E4.TG.1 TOP: Angles of elevation
KEY: legs | ratios