ALBERTA MATH 30-3 · UNIT 4 · 25 QUESTIONS

Formulas and Relations — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **Distance, rate, and time are related by $d = rt$. Solved for t , this formula is**

- **A** $t = dr$
- **B** $t = \frac{d}{r}$
- **C** $t = \frac{r}{d}$
- **D** $t = d - r$

Understand It with Pulse | Flag a mistake

2 **Temperature is converted using $F = \frac{9}{5}C + 32$. If F = 68° F , then C is**

- **A** 20° C
- **B** 36° C
- **C** 55.6° C
- **D** 154.4° C

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3 **The perimeter of a rectangle is P = 2l + 2w . Solved for w , this formula is**

- **A** $w = P - 2l$
- **B** $w = \frac{P + 2l}{2}$
- **C** $w = \frac{P - 2l}{2}$
- **D** $w = 2P - l$

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4 **Simple interest is $I = Prt$. A loan of $2500 earns $200 in interest over 2 years. The interest rate, r , is**

- **A** 40%
- **B** 2%
- **C** 8%
- **D** 4%

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5 **The area of a triangle is $A = \frac{1}{2}bh$. A triangular sign has area 42 cm² and base 7 cm . Its height is**

- **A** 12 cm
- **B** 6 cm
- **C** 21 cm
- **D** 294 cm

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6 **A plumber charges using C = 60 + 85h , where C is the total cost in dollars and h is the hours of labour. The number 85 in this relation means that**

- **A** The plumber charges $60 per hour of labour.
- **B** The plumber charges $85 per hour of labour.
- **C** The total cost of 85 hours of labour is $60 .
- **D** The call out fee before any labour is $85 .

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7 **A taxi company charges using C = 3.50 + 2.00d , where C is the fare in dollars and d is the distance in kilometres. The fare for a 13 km trip is**

- **A** $26.00
- **B** $45.50
- **C** $29.50
- **D** $18.50

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8 **A hall rental costs $40 for 0 hours, $55 for 1 hour, $70 for 2 hours, and $85 for 3 hours. Following the same pattern, the cost for 7 hours is**

A $105

B $130

C $115

D $145

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9 **A gym membership costs C = 120 + 35m , where C is the total cost in dollars and m is the number of months. The number 120 in this relation represents**

A The one time sign up fee of $120 .

B The fee of $120 charged each month.

C The total cost after 120 months.

D The number of months in the membership.

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10 **A water tank holds 240 L at time 0 minutes and 180 L at time 6 minutes while it drains at a steady rate. The slope of the volume versus time relation is**

A -60 L per minute

B -10 L per minute

C 10 L per minute

D -6 L per minute

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11 **The volume of a box is V = lwh . A storage box has volume 360 cm³ , length 9 cm , and width 8 cm . Its height is**

A 40 cm

B 45 cm

C 5 cm

D 25920 cm

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12 **The circumference of a circle is $C = 2\pi r$. Using $\pi = 3.14$, a circle with circumference 62.8 cm has radius**

- A 31.4 cm
- B 197.2 cm
- C 20 cm
- D 10 cm

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13 **In an electric circuit, $V = IR$. If the voltage is 36 volts and the resistance is 9 ohms, the current is**

- A 4 amperes
- B 324 amperes
- C 45 amperes
- D 0.25 amperes

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14 **The graph shows the height of a ball over time. The maximum height of the ball is**

- **A** 2 m
- **B** 20 m
- **C** 4 m
- **D** 10 m

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15 **A bacteria culture starts with 50 bacteria and the number doubles every hour. The number of bacteria after 5 hours is**

- **A** 250
- **B** 800
- **C** 1600
- **D** 3200

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16 **Solve for x in the equation 4x - 8 = 28 . The value of x is**

A 5

B 7

C 20

D 9

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17 **Temperature is converted using $F = \frac{9}{5}C + 32$. If C = 30° C , then F is**

A 86° F

B 54° F

C 62° F

D 16.7° F

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18 **For a linear relation, y = 7 when x = 0, y = 10 when x = 1, y = 13 when x = 2, and y = 16 when x = 3. An equation for this linear relation is**

- **A** y = 7x + 3
- **B** y = 3x + 7
- **C** y = 3x - 7
- **D** y = 7x - 3

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19 **A courier is paid using E = 15h + 20 , where E is the pay in dollars and h is the hours worked. If the courier is paid $200 , the hours worked are**

- **A** 13.3 hours
- **B** 10 hours
- **C** 12 hours
- **D** 14.7 hours

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20 **The graph shows profit versus items sold. The number of items that gives the maximum profit is**

- A 0
- B 100
- C 2500
- D 50

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21 **For a ramp, $\tan(\theta) = \frac{\text{rise}}{\text{run}}$. The tangent ratio is 0.364 and the run is 5 m . The rise, to the nearest hundredth, is**

- A 1.82 m
- B 13.74 m
- C 5.36 m
- D 4.64 m

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22 **A cup of hot chocolate cools steadily. Its temperature is 90° C at 0 minutes, 80° C at 10 minutes, 70° C at 20 minutes, and 60° C at 30 minutes. Following the same pattern, its temperature at 55 minutes is**

- A 45° C
- B 35° C
- C 55° C
- D 25° C

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23 **Simple interest is I = Prt . An investment of $1500 at a rate of 0.05 per year earns $300 in interest. The time, t , is**

- A 20 years
- B 5 years
- C 4 years
- D 2 years

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24 **A graph of a car value versus time starts at $24000 and the value is cut in half every 6 years, reaching $12000 after 6 years. The value of the car after 12 years is**

A $24000

B $12000

C $3000

D $6000

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25 **The perimeter of a garden is P = 2l + 2w . The perimeter is 48 m and the width is 7 m . The length is**

A 17 m

B 20.5 m

C 34 m

D 10 m

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ANSWER KEY

1.	B	**10.**	B	**19.**	C
2.	A	**11.**	C	**20.**	D
3.	C	**12.**	D	**21.**	A
4.	D	**13.**	A	**22.**	B
5.	A	**14.**	B	**23.**	C
6.	B	**15.**	C	**24.**	D
7.	C	**16.**	D	**25.**	A
8.	D	**17.**	A		
9.	A	**18.**	B		

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