ALBERTA MATH 30-3 · FINAL EXAM · 50 QUESTIONS

Final Exam — 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 **The graph shows the mass recorded each time the same toolbox is weighed four times on the same scale. The readings are very close to one another. This mainly shows that the scale has good**

A precision, because repeated readings agree closely

B accuracy, because the readings equal the true mass

C tolerance, because the readings fall within a set range

D uncertainty, because each reading might be wrong

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2 **Triangle ABC is shown. In triangle ABC , angle A = 42° and angle B = 68° . Side b , opposite angle B , is 15.0 m. The length of side a , to the nearest tenth of a metre, is**

- A 10.8 m
- B 20.8 m
- C 15.2 m
- D 12.0 m

Understand It with Pulse | Flag a mistake

3 **Priya takes out a loan of $ 4 500 at 4% simple interest per year for 2 years. The total amount she repays is**

- A $ 4 680.00
- B $ 4 860.00
- C $ 360.00
- D $ 4 500.00

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4 **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** $t = d - r$

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5 **A shoe store sold sizes 8, 9, 9, 10, 9, 11, 8, and 9 in one morning. The mode shoe size is**

- **A** 8
- **B** 10
- **C** 9
- **D** 11

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6 **Which measurement of a board is the most precise?**

A 14.0 cm

B 14.05 cm

C 14 cm

D 14.5 cm

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7 **Two observers on flat ground are 2000 m apart. An airplane is directly above the line joining them, between the two observers. The angles of elevation of the airplane are 40° and 60° . The height of the airplane above the ground, to the nearest metre, is**

A 1759 m

B 1523 m

C 1286 m

D 1131 m

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8 **A credit card has a balance of $ 1 250 . The minimum payment is 4% of the balance. The minimum payment is**

- A $ 12.50
- B $ 25.00
- C $ 125.00
- D $ 50.00

Understand It with Pulse | Flag a mistake

9 **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%

Understand It with Pulse | Flag a mistake

10 **A standard die is rolled once. The probability of rolling a 5 or a 6 is**

- **A** $\frac{1}{6}$
- **B** $\frac{1}{3}$
- **C** $\frac{1}{2}$
- **D** $\frac{2}{3}$

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11 **A pipe must have a diameter of 80 mm with a tolerance of 5%. The acceptable range of diameters for the pipe is**

- **A** 75 mm to 85 mm
- **B** 79 mm to 81 mm
- **C** 80 mm to 84 mm
- **D** 76 mm to 84 mm

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12 **Two straight edges of a triangular flower bed are 9 m and 12 m long, and they meet at an angle of 55° . The length of the third edge, to the nearest tenth of a metre, is**

- A 18.7 m
- B 10.1 m
- C 15.0 m
- D 6.9 m

Understand It with Pulse | Flag a mistake

13 **Jordan borrows $ 2 000 at 5% simple interest per year for 3 years. The amount of interest charged is**

- A $ 300.00
- B $ 100.00
- C $ 600.00
- D $ 2 300.00

Understand It with Pulse | Flag a mistake

14 **The volume of a box is $V = lwh$. A storage box has volume 360 cm^3 , length 9 cm , and width 8 cm . Its height is**

- A 40 cm
- B 45 cm
- C 5 cm
- D 25920 cm

Understand It with Pulse | Flag a mistake

15 **Five workers earn $18, $20, $22, $19, and $26 per hour. The mean hourly wage is**

- A $20
- B $21
- C $19
- D $22

Understand It with Pulse | Flag a mistake

16 **A machinist records a length of 23.47 cm. The number of decimal places in this measurement is**

- A 3
- B 1
- C 4
- D 2

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17 **Triangle OAB is shown. A vertical mast stands at point O on flat ground. Two pegs, A and B , are in the ground with OA = 6 m, OB = 9 m, and angle AOB = 55° . The distance between the two pegs, to the nearest tenth of a metre, is**

- A 13.4 m
- B 7.4 m
- C 10.8 m
- D 4.6 m

Understand It with Pulse | Flag a mistake

18 **The graph shows the value of an investment over time. The interest earned in the first 2 years is**

- A $ 200.00
- B $ 210.00
- C $ 100.00
- D $ 1 210.00

Understand It with Pulse | Flag a mistake

19 **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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20 **A box holds 7 blue pens and 5 black pens. One pen is chosen at random. The probability that it is blue is**

- **A** $\frac{5}{12}$
- **B** $\frac{7}{5}$
- **C** $\frac{7}{12}$
- **D** $\frac{1}{2}$

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21 **A jug holds exactly 100 mL of water. A student measures the volume four times and gets 88 mL, 89 mL, 88 mL, and 89 mL. These measurements are best described as**

- **A** accurate but not precise
- **B** both accurate and precise
- **C** neither accurate nor precise
- **D** precise but not accurate

Understand It with Pulse | Flag a mistake

22 **A triangular lot has sides of 7 m, 9 m, and 11 m. The measure of the largest angle of the lot, to the nearest tenth of a degree, is**

- A 39.4°
- B 54.7°
- C 94.1°
- D 85.9°

Understand It with Pulse | Flag a mistake

23 **Leasing a car requires a payment of $ 2 000 at signing, plus monthly payments of $ 350 for 36 months. The total cost of the lease is**

- A $ 12 600.00
- B $ 2 350.00
- C $ 14 000.00
- D $ 14 600.00

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24 **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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25 **Delivery times in minutes were 12, 15, 12, 18, 20, 12, and 16 . The mode and the median of the times are**

- A Mode 15, median 12
- B Mode 12, median 12
- C Mode 12, median 15
- D Mode 16, median 15

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26 **A door is 80 in. tall. Using 1 in. = 2.54 cm, its height, in centimetres, is**

- **A** 203.2 cm
- **B** 31.5 cm
- **C** 82.54 cm
- **D** 2032 cm

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27 **A pyramid-shaped tent has two slant edges of 5 m each running from the apex to two corners of its square base. The diagonal between those two corners is 8.5 m. The angle at the apex between the two slant edges, to the nearest tenth of a degree, is**

- **A** 31.8°
- **B** 63.6°
- **C** 73.7°
- **D** 116.4°

Understand It with Pulse | Flag a mistake

28 **A laptop costs $ 1 200 cash. On a store credit plan, Sam pays 14 monthly payments of $ 100 . The extra amount Sam pays for using credit is**

A $ 200.00

B $ 1 400.00

C $ 1 200.00

D $ 100.00

Understand It with Pulse | Flag a mistake

29 **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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30 **A bag contains 4 red counters and 6 blue counters. One counter is drawn at random. The odds against drawing a red counter are**

- A 2:3
- B 3:5
- C 3:2
- D 2:5

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31 **A stopwatch displays times to the nearest hundredth of a second. The precision of the stopwatch is**

- A 0.01 s
- B 0.1 s
- C 1 s
- D 0.001 s

Understand It with Pulse | Flag a mistake

32 **Triangle ABC is shown. Two support arms of a conveyor are 4 ft and 6 ft long and meet at an angle of 70° . The distance between their free ends, to the nearest tenth of a foot, is**

A 8.3 ft

B 6.0 ft

C 7.2 ft

D 3.6 ft

Understand It with Pulse | Flag a mistake

33 **A loan of $ 2 500 is charged 8% simple interest for one year. The total amount repaid is**

A $ 2 700.00

B $ 2 500.00

C $ 200.00

D $ 2 900.00

Understand It with Pulse | Flag a mistake

34 **Temperature is converted using $F = \frac{9}{5}C + 32$. An oven set to 180° C is equal to**

- A 100° F
- B 324° F
- C 356° F
- D 212° F

Understand It with Pulse | Flag a mistake

35 **Prices of work gloves at five stores are $12, $8, $15, $10, and $9 . The median price is**

- A $15
- B $10
- C $10.80
- D $12

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36 **A rope is 5 yd long. Its length, in feet, is**

- A 15 ft
- B 60 ft
- C 1.67 ft
- D 180 ft

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37 **Three paths in a park form a triangle with sides of 30 m, 40 m, and 45 m. The angle opposite the 45 m side, to the nearest tenth of a degree, is**

- A 60.6°
- B 78.6°
- C 40.8°
- D 101.4°

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38 **Janelle can rent a trailer for $ 150 per week, or buy the same trailer for $ 3 900 . She needs the trailer for 30 weeks. Which statement about the two options is correct?**

A Buying is cheaper. Renting for 30 weeks costs $ 4 500 , which is $ 600 more than buying

B Renting is cheaper. Renting for 30 weeks costs $ 3 900 , which is less than buying

C Both options cost $ 4 500 in total, so neither option is cheaper

D Renting costs $ 4 500 in total, which is $ 600 less than buying

Understand It with Pulse | Flag a mistake

39 **The graph shows the height of a stone over time. The time when the stone lands back on the ground is**

A 0 s

B 2 s

C 4 s

D 20 s

Understand It with Pulse | Flag a mistake

40 The graph shows customers served each week for four weeks. The mean number of customers per week is

- A 45
- B 55
- C 50
- D 200

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41 A garden hose fitting must have a length of 120 mm ± 3 mm. The minimum acceptable length of the fitting is

- A 123 mm
- B 120 mm
- C 126 mm
- D 117 mm

Understand It with Pulse | Flag a mistake

42 **A vertical antenna mast stands at point O on flat ground. Two guy-wire pegs, A and B , have OA = 7 m, OB = 10 m, and angle AOB = 62° . The distance between the pegs, to the nearest tenth of a metre, is**

- A 14.7 m
- B 12.2 m
- C 5.4 m
- D 9.1 m

Understand It with Pulse | Flag a mistake

43 **In one month, a delivery business pays $ 420 for fuel, $ 180 for insurance, and $ 250 for repairs. The total expenses for the month are**

- A $ 850.00
- B $ 600.00
- C $ 670.00
- D $ 430.00

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44 **A graph of elevation versus horizontal distance for a ski run passes through (0, 900) and (400, 300) , in metres. The slope of the run, to the nearest hundredth, is**

A -600

B 1.50

C -1.50

D -0.67

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45 **The mean of four numbers is 15 . Three of the numbers are 12, 16, and 14 . The fourth number is**

A 14

B 16

C 18

D 20

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46 **A tire should be inflated to 32 psi with a tolerance of 2 psi. The graph shows the gauge readings for the tire over four checks. The most recent reading, the last point on the graph, is**

A acceptable, because 35 psi is within the tolerance

B too low, because it is below the minimum of 30 psi

C acceptable, because it is exactly at the maximum of 34 psi

D too high, because it is above the maximum of 34 psi

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47 **Two boats leave the same dock at the same time. One travels 12 km and the other travels 18 km, and the angle between their routes is 48° . The distance between the two boats, to the nearest tenth of a kilometre, is**

A 13.4 km

B 27.5 km

C 21.6 km

D 15.9 km

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48 **An amount of $ 500 is invested at 4% interest, compounded annually. The total value of the investment after 2 years is**

- **A** $ 540.80
- **B** $ 540.00
- **C** $ 40.80
- **D** $ 520.00

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49 **A water bill charges a $18 service fee plus $3 for each m³ of water used. If C is the total cost in dollars and v is the volume used, an equation for the bill is**

- **A** C = 18v + 3
- **B** C = 3v + 18
- **C** C = 21v
- **D** C = 3(v + 18)

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50

A repair costs $200 . The chance of needing the repair in one year is 10% . A one year warranty costs $30 . Which decision is supported by the expected value?

A The expected repair cost is $200, so buy the warranty.

B The expected repair cost is $30, so the warranty breaks even.

C The expected repair cost is $20, which is less than $30, so the warranty is not worth it on average.

D The expected repair cost is $50, so buy the warranty.

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ANSWER KEY

1.	A	**18.**	B	**35.**	B
2.	A	**19.**	C	**36.**	A
3.	B	**20.**	C	**37.**	B
4.	B	**21.**	D	**38.**	A
5.	C	**22.**	D	**39.**	C
6.	B	**23.**	D	**40.**	C
7.	D	**24.**	C	**41.**	D
8.	D	**25.**	C	**42.**	D
9.	D	**26.**	A	**43.**	A
10.	B	**27.**	D	**44.**	C
11.	D	**28.**	A	**45.**	C
12.	B	**29.**	C	**46.**	D
13.	A	**30.**	C	**47.**	A
14.	C	**31.**	A	**48.**	A
15.	B	**32.**	B	**49.**	B
16.	D	**33.**	A	**50.**	C
17.	B	**34.**	C		

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