ALASKA GEOMETRY · 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 **Two triangles have two pairs of corresponding angles equal, and a pair of corresponding nonincluded sides equal. The congruence criterion is**

- A ASA
- B SSS
- C AAS
- D HL

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2 **An inscribed angle intercepts an arc of 110°. The inscribed angle measures**

- **A** 110°
- **B** 220°
- **C** 27.5°
- **D** 55°

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3 **In a right triangle, the side adjacent to an acute angle is 9 and the hypotenuse is 15. The cosine of the angle is**

- **A** $\frac{12}{15}$
- **B** $\frac{9}{15}$
- **C** $\frac{9}{12}$
- **D** $\frac{15}{9}$

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4 The data are 4, 8, 9, 12, 15, and 20. The median is

- A 9
- B 10.5
- C 12
- D 13.5

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5 A triangle has two sides of lengths 5 and 12. Which length could be the third side?

- A 6
- B 7
- C 15
- D 17

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6 **A radius drawn to a point of tangency makes an angle with the tangent of**

- A 45°
- B 180°
- C 60°
- D 90°

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7 **In a right triangle, an angle measures 45° and the hypotenuse is 12. The opposite side, to one decimal place, is about**

- A 6
- B 12
- C 17.0
- D 8.5

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8 **The data are 2, 4, and 6. The population standard deviation, to one decimal place, is about**

- A 2
- B 1.6
- C 2.7
- D 4

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9 **Triangle ABC is congruent to triangle DEF. Angle A measures 50° and angle B measures 60°. Angle F measures**

- A 50°
- B 60°
- C 70°
- D 110°

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10 **A tangent segment and a secant meet outside a circle. The secant has an outside segment of 5 and a whole length of 20. The tangent segment has length**

- **A** 5
- **B** 20
- **C** 10
- **D** 25

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11 **A tree is 30 m from an observer. The angle of elevation to the top is 30°. The height of the tree, to one decimal place, in metres, is about**

- **A** 17.3
- **B** 51.9
- **C** 15
- **D** 30

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12 Three fair coins are tossed. The probability of three heads is

- **A** $\frac{1}{2}$
- **B** $\frac{3}{8}$
- **C** $\frac{1}{8}$
- **D** $\frac{1}{4}$

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13 In a triangle, a midsegment is parallel to a base of length 18. The length of the midsegment is

- **A** 9
- **B** 18
- **C** 36
- **D** 4.5

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14 **A circle has radius 7. Its area, to one decimal place, is about**

- A 44.0
- B 307.9
- C 49.0
- D 153.9

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15 **In a triangle, two sides measure 6 and 8 with included angle 60°. The third side, to one decimal place, is about**

- A 14
- B 10
- C 5
- D 7.2

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16 **A bag has 5 red balls and 5 blue balls. Two balls are drawn without replacement. The probability both are red is**

A $\frac{1}{4}$

B $\frac{2}{9}$

C $\frac{1}{2}$

D $\frac{4}{9}$

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17 **Two similar triangles have shortest sides 4 and 12. The longest side of the smaller triangle is 9. The longest side of the larger triangle is _____**

ANSWER

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18 **The equation of the circle with center (-3, 2) and radius 4 is**

- **A** $(x - 3)^2 + (y + 2)^2 = 16$
- **B** $(x + 3)^2 + (y - 2)^2 = 16$
- **C** $(x + 3)^2 + (y - 2)^2 = 4$
- **D** $(x - 3)^2 + (y - 2)^2 = 16$

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19 **A rectangular prism measures 2 by 5 by 6. Its surface area is**

- **A** 60
- **B** 104
- **C** 208
- **D** 52

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20 **A line of best fit is y = 3x - 2. The predicted value of y when x = 6 is**

- A 20
- B 4
- C 10
- D 16

Understand It with Pulse | Flag a mistake

21 **The point (5, -3) reflected across the y -axis maps to**

- A (-5, 3)
- B (5, 3)
- C (-5, -3)
- D (5, -3)

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22 **The midpoint of the segment joining (0, 4) and (6, 10) is**

- A (3, 7)
- B (6, 14)
- C (3, 3)
- D (-3, -3)

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23 **A cone has radius 3 and height 10. Its volume, to one decimal place, is about**

- A 282.7
- B 94.2
- C 31.4
- D 188.5

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24 **In a scatter plot, as x increases, y tends to increase. The correlation is**

A positive

B none

C negative

D perfectly negative

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25 **One triangle has sides 4, 6, and 8. Another has sides 6, 9, and 12. The triangles are**

A similar by SAS

B similar by SSS

C not similar

D similar by AA

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26 The center of a circle with diameter endpoints (-1, 5) and (7, 1) is

A (6, 4)

B (8, 6)

C (-4, 2)

D (3, 3)

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27 A right triangle has hypotenuse 25 and one leg 7. The other leg is _____

ANSWER _____

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28 **Adding a very small outlier to a data set usually**

A increases the median more than the mean

B leaves both the mean and median unchanged

C decreases the mean more than the median

D changes the mode the most

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29 **A figure has perimeter 36. Under a dilation with scale factor 0.5, the perimeter of the image is ____**

ANSWER _____

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30 **A circle has radius 10. A sector with central angle 72° has area, to one decimal place, about ____**

ANSWER _____

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31 In a right triangle, the side opposite an acute angle is 7 and the hypotenuse is 25. The sine of the angle is

- **A** $\frac{7}{25}$
- **B** $\frac{24}{25}$
- **C** $\frac{7}{24}$
- **D** $\frac{25}{7}$

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32 The data are 2, 6, 10, and 14. The mean is

- **A** 8
- **B** 10
- **C** 6
- **D** 32

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33 **Triangle ABC is similar to triangle DEF. Angle A measures 42° and angle C measures 88°. Angle E measures**

- A 42°
- B 88°
- C 50°
- D 130°

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34 **An inscribed angle intercepts an arc of 150°. The inscribed angle measures**

- A 150°
- B 300°
- C 75°
- D 37.5°

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35 **In a right triangle, an angle measures 30° and the hypotenuse is 20. The opposite side is**

A 20

B 10

C 17.3

D 5

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36 **The data range from 12 to 45. The range is**

A 33

B 45

C 12

D 57

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37 **Under the translation (x + 2, y - 5), the point (-6, 9) maps to**

- A (-8, 14)
- B (-4, 14)
- C (-8, 4)
- D (-4, 4)

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38 **A tangent segment and a secant meet outside a circle. The secant has an outside segment of 2 and a whole length of 18. The tangent segment has length**

- A 3
- B 9
- C 6
- D 36

Understand It with Pulse | Flag a mistake

39 **In a triangle, angle A measures 30°, side a = 8, and angle B measures 60°. Side b, to one decimal place, is about**

- A 13.9
- B 16
- C 6.9
- D 4

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40 **The data are 5 and 9. The mean absolute deviation is**

- A 4
- B 0
- C 7
- D 2

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41 **Two similar figures have a linear scale factor of 2:5. The larger figure has area 100. The smaller area is**

A 40

B 16

C 250

D 64

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42 **A circle has diameter 10. Its area, to one decimal place, is about**

A 31.4

B 157.1

C 314.2

D 78.5

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43 **A sphere has radius 2. Its volume, to one decimal place, is about**

- A 33.5
- B 16.8
- C 50.3
- D 100.5

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44 **The probability of an event is 0.82. The probability it does not happen is**

- A 0.82
- B 0.18
- C 1.82
- D 0.082

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45 The remote interior angles of a triangle measure 38° and 72°. The exterior angle at the third vertex measures

- **A** 110°
- **B** 70°
- **C** 38°
- **D** 148°

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46 The equation of the circle with center (0, -6) and radius 3 is

- **A** $x^2 + (y - 6)^2 = 9$
- **B** $(x - 6)^2 + y^2 = 9$
- **C** $x^2 + (y + 6)^2 = 3$
- **D** $x^2 + (y + 6)^2 = 9$

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47 **A cylinder has radius 5 and height 4. Its volume, to one decimal place, is about ____**

ANSWER _____

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48 **For a data point, the actual value is 30 and the predicted value is 27. The residual is ____**

ANSWER _____

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49 **Under a dilation with scale factor 2.5, a side of length 6 maps to a side of length ____**

ANSWER _____

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50 **The distance between (0, 0) and (6, 8) is ____**

ANSWER _____

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ANSWER KEY

1. C
2. D
3. B
4. B
5. C
6. D
7. D
8. B
9. C
10. C
11. A
12. C
13. A
14. D
15. D
16. B
17. 27
18. B
19. B
20. D
21. C
22. A
23. B
24. A
25. B
26. D
27. 24
28. C
29. 18
30. 62.8
31. A
32. A
33. C
34. C
35. B
36. A
37. D
38. C
39. A
40. D
41. B
42. D
43. A
44. B
45. A
46. D
47. 314.2
48. 3
49. 15
50. 10

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