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| **Geometry Milestone Test** | Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ S: \_\_\_\_\_ |
| 1. A regular pentagon is centered about the origin and has a vertex at (0, 4). Which transformation maps the pentagon onto itself?A. a reflection across line m.B. a reflection across the x-axis.C. a clockwise rotation of 100° about the origin.D. a clockwise rotation of 144° about the origin. |  | 2. Triangle *A’B’C’* in Q1 is:a. A translation of triangle *ABC* across the *x*-axis.b. A 2700 rotation of triangle *ABC* about the origin.c. A reflection of triangle *ABC* across the *y*-axis.d. A reflection of triangle *ABC* across the *x*-axis. |  |
| 3) In the coordinate plane, segment $\overbar{PQ}$ is the result of a dilation of segment $\overbar{XY}$ by a scale factor of $\frac{1}{2}$ . What is the point of dilation?A. (–4, 0) B. (0, –4)C. (0, 4) D. (4, 0) |  | 4. Triangle △ABC is dilated by a factor of $\frac{2}{3}$ to form △XYZ. Given that m∠A = 50° and m∠B = 100°, what is m∠Z?A. 15° B. 25°C. 30° D. 50° |
| 5) What is the rule for a 90 degree counterclockwise rotation about the origin?A. $(-Y, X)$B. $(Y, -X)$C. $(-X, -Y)$D. $(X, -Y)$ | 6. Point $(-4, 3)$ is reflected about the line $y=-5$. What is the new point?A. $(-6, 3)$B. $(-3, 3)$C. $(-4, 5)$D. $(-4, -13)$ | 7. This partially completed construction is of a . . . A. Angle BisectorB. Tangent Line C. Parallel Lines through a pointD. Perpendicular Bisector | 8. What is the length of $\overbar{EG}?$A. 5.5B. 5C. 4.5D. 4 |
| 9. ABCD is a square. Which **two** properties can’t be used to prove $∆ABD≅∆CDB$?A. Vertical anglesB. Reflexive sidesC. Alternate Interior AnglesD. Corresponding angles |  | 10. What congruency rule proves $∆ENV≅∆LOV?$A. SSAB. SASC. HLD. Not possible |  |

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| 11. In a right $∆ABC$, C is the right angle. If $sin A=\frac{5}{13}, $what is cos A?a.  b.  c.  d.  | 12. A 6 ft tall man casts a shadow 14 feet long. What is the angle of elevation that the sun ray makes with the ground to the nearest whole number?a. $19°$ b. $21°$ c. $23°$ d. $25°$ |  |
| 13. A hot air balloon is 1200 feet above the ground. The angle of depression from the basket to the base of a monument is 58 degrees. What is the distance, d, from the balloon to the base of the monument to two decimals?A. 1.017.66 ft B. 1,200 ftC. 1,386.45 D. 1,415.01 ft |  | 14. What is the length of Y? A. $9\sqrt{2}$ ftB. $9\sqrt{3}$ ftC. $9+\sqrt{3} $ftD. $9+9\sqrt{3} $ft | 15. Find x.A. 4 B. 5C. 7 D. 8 |
| 16. Find the **volume** of the cylinder to the nearest tenth.A. 1,026,484.0 mm3 B. 256,621.0 mm3C. 85,540.3 mm3 D. 5,270 mm3 |  |
| 17.  A triangular prism has an isosceles right triangle as a base. Each leg of the base is 7.2 cm long and the height of the prism is 13.2 cm. Fine the **volume of the prism.** A. 342.1 cm2 B. 646.8 cm2C. 684.3 cm3  D. 228.1 cm3 |  |
| 18. What is the **radius** of a sphere with a volume of 8,181.2 cm3?A. 10 cm B. 11 cm C. 12 cm D. 12.5 cm |
| 19. Find the **volume** and **surface area** of the rectangular prism.A. $5.51 m^{3}, 19.08 m^{3}$ B. $19.08 m^{3}, 5.51 m^{3}$C. $6.75 m^{3}, 19.08 m^{3}$ D. $19.08 m^{3}, 6.75 m^{3}$ |  |
| 20. Find the **volume** of each hemisphere. Round to the nearest hundredth.A. $14,137.17 cm^{3}$ B. $15,255.10 cm^{3}$ C. $7,627.55 cm^{3}$ D. $7,068.58 cm^{3}$  |  |
| 21. If a marble has a **volume** of 523.6 mm3, how many whole marbles can fit in the cone, ignoring empty space?A. 4,608 B. 4,607C. 3,299 D. 4,806 |  |
| 22. If each of the following solids has a height of 8 cm, which has the greatest volume? |
| 23. Find x.A. 3 B. 4C. 5 D. 6 |  | 24. Find the perimeter.A. 70 cm B. 73 cmC. 75 cm D. 78 cm |  |
| 25. What is the measure of angle RPS?A. $25 °$ B. 125$ °$C. $85 °$ D. $35 °$ |  | 26. Find x.A. 15 B. 17C. 19.25 D. 19.5 |  |
| 27. What is the measure of the intercepted arc?A. $50°$ B. $53°$C. $56°$ D. $59°$ |  | 28. What is the measure of arc $\hat{BC}$?A. 26$°$ B. $52°$C. $90°$ D. $180°$ |  |
| 29. What is the cross-section of the figure shown? a) b) c)  d) |  |

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| 30. Find the line that is perpendicular to $y=\frac{5}{3}x – 2$and passes through point $A( -12, 3)$**.**A. $y=-\frac{3}{5}x – 2$ B. $y=\frac{5}{3}x+7$C. $y=\frac{5}{3}x – \frac{21}{5}$ D. $y=-\frac{3}{5}x – \frac{21}{5}$ | 31. Find point Y that partitions the directed line segment ZX in a ratio of 4:3.$$X(-4, 8) and Z(-10, -2)$$A. $(-7.43, 2.29)$ B. $(-7.43, 3.71)$C. $(-6.57, 2.29)$ D. $(-6.57, 3.71)$ | 32. Put$3x^{2}+3y^{2}-24x+12y+13=0$into standard form of a circle and find the center and radius.A. $Center:\left(-4, 2\right), r=12$ B. $Center:\left(-4, 2\right), r=16$C. $Center:\left(4, -2\right), r=15.67$D. $Center:\left(4, -2\right), r= 3.96$ |
| 33. Find the perimeter and area $\left(\frac{b ∙ h}{2}\right)$ of the obtuse triangle at right.A. 51, 42 B. 50, 42C. 49.5, 41 D. 49, 41 |  | 34. Convert to general form to one decimal.$$(x-7)^{2}+(y+4)^{2}=2\sqrt{7}$$A. $ x^{2}+y^{2}-14x+8y+59.71=0$B. $x^{2}+y^{2}-7x+4y+37$ = 0C. $x^{2}+y^{2}-14x+8y+31$ = 0D.$ x^{2}+y^{2}-7x+4y+31$ = 0 |
| 35. In a particular state, the first character on a license plate is always a letter. The last character is always a digit from 0 to 9. If V represents the set of all license plates beginning with a vowel, and O represents the set of all license plates that end with an odd number, which license plate belongs to the set V and O′?1. b)  c)  d)
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| 36. A random survey was conducted about gender and hair color. This table records the data. What is the probability that a randomly selected person has blonde hair, **given** that the person selected is male? a) 0.51 b) 0.55c) 0.58 d) 0.63 |  |
| 37. In soccer, a shutout is a game where the winning team does not allow the other team to score a goal. If the set W represents all wins, and S represents all shutouts, which set describe the set of all shutout wins?1. b)  c)  d)
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| 38 & 39. On a separate sheet of paper, construct an angle bisector, and perpendicular bisector. |