**Benchmark Review –** Quarter 1🖉

**Show all work on a separate sheet of paper!**

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| **List the first 15 perfect squares.**  | **Final Answers** |
| **1.** |  |
| **Identify the two square roots of each number.** |
| **2.** | 25 | **2.** |  |
| **3.** | 169 | **3.** |  |
|  |
| **Simplify each expression** |
| **5.** | $\sqrt{25}$ + $\sqrt{121}$ | **5** |  |
| **6.** | $\sqrt{64-15}$ − $\sqrt{16}$ | **6.** |  |
| **Each square root is between two consecutive integers. Name the integers and approximate the square root to the nearest hundredth.** |
| **8.** | $$\sqrt{12}$$ | **8.** |  |
| **9.** | $$-\sqrt{52}$$ | **9.** |  |
| **Apply your knowledge by answering the following questions.** |
| **10.** | John is trying to determine how much icing he will need to put the border on a birthday cake she is making. What is the perimeter of her square cake pan with an area of 81 square inches? | **10.** |  |

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| **Simplify each square root by factoring out the perfect squares.**  |
| **11.** | $$\sqrt{18}$$ | **11.** |  |
| **12.** | $$\sqrt{50}$$ | **12.** |  |

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| **Complete the table below. Simplify all fractions to lowest terms.**  |
| **13.** |

|  |  |  |
| --- | --- | --- |
| Fraction | Decimal | Percent |
| $$\frac{1}{5}$$ |  |  |
| $$\frac{4}{9}$$ |  |  |
|  | 0.4 |  |
|  | 0.75 |  |
|  |  | 52% |
|  |  | 15% |

 |
| **Write the following repeating decimals as fractions.**  |
| **14.** | $$3.\overbar{33}$$ | **14.** |  |
| **15.** | 0.1$\overbar{2}$ | **15.** |  |
| **Classify the following as rational or irrational.**  |
| **16.** | $$\sqrt{17}$$ | **16.** |  |
| **17.** | 0.1$\overbar{2}$ | **17.** |  |
| **18.** | $$\frac{2}{5}$$ | **18.** |  |
| **19.** | 3$π$ | **19.** |  |
| **Order these values from least to greatest**  |
| $\sqrt{17}$ 4 $\frac{10}{3}$ 3.9 | **20.** |  |

**Simplify each expression. State your reasoning in words to the right of each expression.**

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| 21. (2*xy)3* |
| 22.   |
| 23. 60  |
| 24.   |
| 25. (32) (34)  |
| 26. (43)2 |
| 27.   |

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| **Write the following in scientific notation**  |
| **28.** | 0.00084 | **28.** |  |
| **29.** | 25,700,000 | **29.** |  |

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| **Write the following in decimal notation.**  |
| **30.** | 4.56 x 104 | **30.** |  |
| **31.** | 1.3 x 10-6 | **31.** |  |
| **Simplify the following.**  |
| **32.** | (1.39 x 103) + (5.32 x 105) | **32.** |  |
| **33.** | (9.32 x 10-4) - (3.2 x 10-5) | **33.** |  |
|  |
| **34.** | (4.6 x 10³) · (2 x 10-5) | **34.** |  |
| **35.** | (26.3 x 105) / (4 x 103) | **35.** |  |
| **Order from least to greatest.**  |
| **36.** | 3.3 x 1056.7 x 1037.2 x 1027.2 x 103  | **36.** |  |
| **Apply your knowledge to answer the following.**  |
| **37.** | The Earth’s crust contains about 130 trillion metric tons of gold (1.3 x 10^14). One metric ton of gold is worth about $8 million. What is the approximate value of the gold in Earth’s crust?  | **37.** |  |
| **Choose the best measurement.**  |
| **38.** | The distance to the moon. *Meters or miles*  | **38.** |  |
| **39.** | EMMMS’s football field. *Inches or yards* | **39.** |  |
| **40.** | The water a cat drinks in a day. *Gallons or fluid ounces* | **40.** |  |