Zeta Placement Test Answer Key

Rewrite each number without an exponent.

1. $1^6 = $ __**1**__

2. $8^2 = $ __**64**__

3. $10^3 = $ __**1,000**__

Write in decimal notation.

4. $5 \times 10^3 + 2 \times 10^2 + 7 \times 10^1 + 1 \times 10^0 + 3 \times \dfrac{1}{10^1} + 4 \times \dfrac{1}{10^2} + 9 \times \dfrac{1}{10^3} = $

   __**5,271.349**__

Add or subtract the decimal numbers.

5.   7.5 2
       −1.8 5
      5.6 7

6.   6.0
       + 5.2 8
      1 1.2 8

7.   3 2.0 4 1
     −   .5 9 6
      3 1.4 4 5

Multiply the decimal numbers.

8.   2.4 9
      × 0.6
      1.4 9 4

9.   1.7
      × 3
      5.1

10.   0.0 0 4
      × 0.0 5
   0.0 0 0 2 0

Convert using whatever method you prefer.

11. 13 km = **1,300,000** cm

12. __**0.25**__ g = 250 mg

Write each percentage as a decimal.

13. 5% = __**0.05**__

14. 65% = __**0.65**__

Write each percentage as a reduced fraction.

15. 25% = $\dfrac{\textbf{25}}{\textbf{100}}$ = $\dfrac{\textbf{1}}{\textbf{4}}$

16. 32% = $\dfrac{\textbf{32}}{\textbf{100}}$ = $\dfrac{\textbf{8}}{\textbf{25}}$

Change each fraction to a decimal and then to a percentage. Include a fraction in one hundredths place if needed and do not round.

17. $\dfrac{8}{10}$ = __**0.8**__ = __**80**__ %

18. $\dfrac{5}{6}$ = **0.83$\frac{1}{3}$** = **83$\frac{1}{3}$** %

Write the mixed number as a percentage and as a decimal.

19. $4\dfrac{3}{5}$ = $\dfrac{\textbf{400}}{100}$ + $\dfrac{\textbf{60}}{100}$ = $\dfrac{\textbf{460}}{100}$ = **4.60** = **460%**

Change each decimal to a reduced fraction.

20. 0.78 = $\dfrac{\textbf{78}}{\textbf{100}}$ = $\dfrac{\textbf{39}}{\textbf{50}}$

21. 0.03 = $\dfrac{\textbf{3}}{\textbf{100}}$ = _____

Divide to the thousandths place and round to the nearest hundredth.

22. 4 ⟌ 1 3.3

```
  3.325 ≈ 3.33
4⟌13.300
  12 00
   130
   120
    10
     8
     2
```

23. 7 ⟌ 4.5 8

```
  0.654 ≈ 0.65
7⟌4.580
  4200
   380
   350
    30
    28
     2
```

Divide until you see a pattern and write the answer with a line over the repeat.

24. 0.6 ⟌ 3 9.4

```
  65.66 ≈ 65.6̄
.6⟌39.400
  36000
   3400
   3000
    400
    360
     40
     36
      4
```

25. 0.0 3 ⟌ 0.0 2 2

```
  0.733 ≈ 0.7̄3
.03⟌.02200
   2100
    100
     90
     10
      9
      1
```

Divide to the hundredths place. Include a fraction in your answer if there is still a remainder.

26. $11 \overline{) 9.}$

$$0.81\tfrac{9}{11}$$
$$11\overline{)9.00}$$
$$\underline{880}$$
$$20$$
$$\underline{11}$$
$$9$$

27. $9 \overline{) 5}$

$$0.55\tfrac{5}{9}$$
$$9\overline{)5.00}$$
$$\underline{450}$$
$$50$$
$$\underline{45}$$
$$5$$

Solve for the unknown. Check your answer by using it in the original problem.

28. $3.2X + 0.07 = 4.55$

$$3.2X + 0.07 = 4.55$$
$$3.2X = 4.55 - 0.07$$
$$3.2X = 4.48$$
$$X = 4.48 \div 3.2$$
$$X = 1.4$$

29. Check for #28

$$3.2(1.4) + 0.07 = 4.55$$
$$4.48 + 0.07 = 4.55$$
$$4.55 = 4.55$$

Fill in the blanks.

30. A ___**plane**___ has infinite length and width and is said to be two-dimensional.

31. A **line segment** has two endpoints.

32. A ___**point**___ has no length or width.

33. A line has ___**length**___ but no ___**width**___ .

34. A ___**ray**___ has one endpoint.

35. An angle with a measure less than 180° but greater than 90° is a(n) ___**obtuse**___ angle.

36. An angle with a measure less than 90° but greater than 0° is a(n) ___**acute**___ angle.

37. Two figures that are the same shape but different sizes are said to be ___**similar**___

38. There are ___**360**___ degrees in a circle.

39. The measure of a right angle is ___**90°**___ .

40. An angle with a measure of 180° is a(n) ___**straight**___ angle.

41. Two shapes that are exactly the same are said to be ___**congruent**___ .

42. Find the approximate area and circumference of a circle that has a radius of three feet.

$$A \approx 3.14(3 \text{ ft})^2 \approx 28.26 \text{ ft}^2$$
$$C \approx 3.14(6 \text{ ft}) \approx 18.84 \text{ ft}$$

43. Judith received the following amounts of money for doing chores:$5, $7, $3.50, $5, and $8. Give the mean, median, and mode for her earnings.

$3.50 + $5 + $5 + $7 + $8 = $28.50
mean = $28.50 ÷ 5 = $5.70, median = $5, mode = $5

44. Melanie ordered books from a catalog. The prices of the books added up to $45.60. She had to pay a 6% tax and 8% for shipping. What was the total cost of her order?

$45.60 × 1.14 ≈ $51.98

45. Brandon entered a contest for free math materials. 758 people each put in one entry, and there will be only one winner. What is the probability of Brandon winning the contest?

$$\frac{1}{758}$$