# ASSET 1

## Practice Placement Test—Numerical Portion

You should not use a calculator to work these problems

**Fractions:**

1. $\frac{2}{5}+\frac{3}{10}=$ a) $\frac{1}{2}$ b) $\frac{7}{10}$ c) $\frac{3}{5}$ d) $\frac{1}{3}$ e)Not Given

2. $7-2\frac{5}{8}=$ a) $4\frac{5}{8}$ b)4 c) $4\frac{3}{8}$ d)4.75 e)Not Given

3. $3\times\frac{5}{6}=$ a) $2\frac{1}{2}$ b) $\frac{5}{6}$ c)2.75 d) $3\frac{5}{6}$ e)Not Given

4. $\frac{5}{6}\div\frac{2}{3}=$ a) $\frac{2.5}{2}$ b)1.5 c)1.75 d)1.25 e)Not Given

5. As part of an exercise program, Hugo is to walk 7/8 of a mile each day. He has already walked 1/3 of a mile. How much further should he walk?

a) $\frac{13}{24}$ mile b) $\frac{2}{3}$ mile c) $\frac{1}{2}$ mile d) $\frac{1}{4}$ mile e)Not Given

6. Carla got a scholarship for 1/3 of her college tuition costs. If the tuition was $5,400, what was the amount of her scholarship?

a)$2,000 b)$1,850 c)$1,700 d)$1,800 e)Not Given

**Decimals:**

7. 13 – 8.765 =

a)5.210 b)4.235 c)4.765 d)5.235 e)Not Given

8. 0.2 x 0.3 x 0.4 =

a)0.24 b)0.0024 c)0.024 d)0.09 e)Not Given

9. 15.2 + 0.026 + 0.0083 =

a)15.2343 b)17.83 c)16.424 d)30.4256 e)Not Given

10. A group of 8 cyclists paid $47.60 for food for a picnic. What is each person's share of the cost?

a)6.00 b)5.90 c)5.85 d)5.95 e)Not Given

**Powers and Roots**

11. $2^5 =$ a)10 b)32 c)64 d)24 e)Not Given

12. $5^3 =$ a)15 b)100 c)125 d)150 e)Not Given

13. $\left(\frac{3}{4}\right)^2$ a) $\frac{6}{8}$ b) $\frac{16}{9}$ c) $\frac{9}{16}$ d)0.75 e)Not Given

14. $\sqrt{81}$ a)7 b)6 c)8 d)9 e)Not Given

**Percents:**

15. Change $\frac{5}{8}$ to a percent.

a)60% b)58% c)62.5% d)61.5% e)Not Given

16. Write 3.2 as a percent.

a)32% b)320% c)3200% d)32,000% e)Not Given

17. What is 35% of 80?

a)28 b)30 c)27 d)35 e)Not Given

18. 13 is what percent of 20?

a)60% b)63% c)65% d)68% e)Not Given

19. In a medical study, it was determined that if 800 people kiss someone who has a cold, only 56 will catch a cold? What percent is this?

a)6.5% b)7% c)7.5% d)7.2% e)Not Given

20. Miguel earns $20,400 one year and receives an 8% raise in salary. What is his new salary?

a)20,800 b)22,000 c)21,032 d)22,032 e)Not Given

**Ratios and Proportions:**

21. A TV has a screen that is 20 inches long and 15 inches wide. Write, in simplest terms, the ratio of length to width.

a) $\frac{4}{3}$ b) $\frac{3}{4}$ c) $\frac{1}{2}$ d) $\frac{2}{3}$ e)Not Given

22. Impulses in nerve fibers travel 310 km in 2.5 hours. What is the rate, or speed, in kilometers per hour?

a)143 km/hr b)127 km/hr c)126 km/hr d)124 km/hr e)Not Given

23. Solve this proportion for the missing number: $\frac{125}{35} = \frac{?}{7}$

a)25 b)30 c)35 d)40 e)Not Given

24. In a class of 40 students, on average, 6 will be left-handed. If a class includes 9 "lefties", how many students would you estimate are in the class?

a)50 b)60 c)45 d)55 e)Not Given

25. In a metal alloy, the ratio of zinc to copper is 3 to 13. If there are 520 pounds of copper, how many pounds of zinc are there?

a)52 b)100 c)120 d)150 e)Not Given

## Elementary Algebra Portion

**Math Sentences Part 1:**
Solve the following linear equations:

26. $3 = 2x + 5 - 3(x - 1)$

a)$x = -5$ b)$x = -1$ c)$x = 5$ d)$x = 1$ e)$x = -2$

27. $\frac{3}{4}x - 3 = \frac{1}{2}x + 2$

a)$x = 20$ b)$x = 10$ c)$x = 4$ d)$x = -4$ e)none of these

28. $0.9y + 3 = 0.4y + 1.5$

a)$y = 9$ b)$y = 5$ c)$y = -3$ d)$y = -9$ e)$y = 3$

29. $0.8x + 0.18 - 0.4x = 0.3(x + 0.2)$

a)$x = -.12$ b)$x = 4.2$ c)$x = 4.4$ d)$x = -1.2$ e)$x = 2.4$

**Evaluate:**

30. What are all the real values of $x$ that are solutions for the inequality $|x-2| \leq 6$?

a) $-8 \leq x \leq -4$ b) $-8 \leq x \leq 4$ c) $-8 \leq x \leq 8$ d) $-4 \leq x \leq 4$ e) $-4 \leq x \leq 8$

**Math Sentences Part 2:**
Solve these inequalities

31. $2 - 3x \leq -5 + 4x$

a) $x \leq -1$ b) $x \leq 1$ c) $-3 \leq x$ d) $x \geq 3$ e) $x \geq 1$

32. $5 - 1/2x > 4$

a) $x > 2$ b) $x > 8$ c) $x < 2$ d) $x > 18$ e) none of these

33. $4y \geq 2(12 - 2y)$

a) $y \geq 4$ b) $y \geq 3$ c) $y \geq 0$ d) $y \leq 4$ e) none of these

34. Is the ordered pair (6,0) a solution to this system of equations? $X + y = 6$ or $-2x + y = -3$

a) yes b) no c) cannot be determined

**Operations on Polynomials:**

35. $(6x + 3y)(2x - 4y)$

a) $12x^2 - 5xy - 12y^2$
b) $12x^2 - 18xy - 12y^2$
c) $12x^2 - 15xy - 12y^2$
d) $12x^2 + 18xy - 12y^2$

36. $y[y(y + 4) - 6]$

a) $y^3 + 4y^2 - 6$
b) $y^3 + 4y^2 - 2$
c) $y^3 - 24y^2 - 6$
d) $y^3 - 6y^2 - 24$
e) none of these

37. $(-2x^2)(x^2 + 3xy - 4y^2)$

a) $2x^4 + 6xy - 8x^2y$
b) $-2x^4 - 6x^3y + 8x^2y^2$
c) $-2x^2 - 6xy - 8x^2y$
d) $-2x^4 + 6xy - 8x^2$

38. Factor completely: $15x^3y - 9x^2y^2$

a) $x^3y - 9x^2y^2$
b) $15x^2y - 9x^3y^2$
c) $5x^3y - 3x^2y^2$
d) $15xy - 9x^2y$
e) none of these

39. Factor completely: $3ax - 7a - 6x + 14$

a) $(a - 2)(3x - 7)$
b) $(3x + 7)(a + 2)$
c) $(3x - 7)(a + 2)$
d) $(a - 4)(3x + 7)$
e) none of these

40. Factor completely: $x^2 - 10x + 24$

a) $(x + 2)(x - 12)$
b) $(x + 6)(x + 4)$
c) $(x - 2)(x + 12)$
d) $(x - 6)(x - 4)$
e) none of these

41. Factor completely: $4x^2 + 7x - 15$

a) $(4x - 5)(x + 3)$
b) $(2x - 5)(2x + 3)$
c) $2(x + 3)(x - 3)$
d) $2(x - 3)^2$
e) none of these

42. Factor completely: $2x^2 - 18$

a) $2(x^2 - 9)$
b) $(2x + 3)(2x - 3)$
c) $2(x + 3)(x - 3)$
d) $2(x - 3)^2$
e) none of these

**Radicals**

43. $\left(\sqrt{2a^3}\right)\left(\sqrt{8b^2}\right)$

a) $4ab\sqrt{2a}$
b) $4b\sqrt{a}$
c) $2b\sqrt{a}$
d) $8ab\sqrt{a}$
e) none of these

44. $\left(\sqrt{11} + 2\right)\left(2\sqrt{11} - 1\right)$

a) $2\left(\sqrt{11} + 2\right)$
b) $\left(\sqrt{11} + 2\right) + \left(\sqrt{11} + 2\right)$
c) $20 + 3\sqrt{11}$
d) $20 + 10\sqrt{11}$
e) none of these

45. $\sqrt[3]{16x^4y^7}$

a) $2xy^3\sqrt{xy}$
b) $4xy^3\sqrt{xy}$
c) $8xy^3\sqrt{xy}$
d) $2xy^2\sqrt[3]{2xy}$
e) none of these