

**Newman University**  
**Mathematics Placement Exam**

Instructions

This assessment tool will be used to help you select an appropriate math course. If you do not follow these instructions, you may be advised into a math course for which you are not ready, and in which you may earn a poor grade. Thus:

- You cannot use a calculator;
- You should not receive any assistance in completing this exam;
- You should not refer to any reference material;
- You should complete this entire test in 40 minutes or less.

Please use the [online answer sheet](#) to enter your responses.

# Newman University Mathematics Placement Exam

**Do not write on this test sheet. Indicate your answer on the answer sheet provided.**

1.  $0.9 - .07 =$

- a. 0.02
- b. 0.083
- c. 0.20
- d. 0.83
- e. Not given

2.  $\frac{3}{4} \cdot \frac{3}{2} =$

- a.  $\frac{7}{4}$
- b.  $\frac{9}{8}$
- c. 1
- d.  $\frac{1}{2}$
- e. Not given

3. Write as a percent.  $0.0025 =$

- a. 25%
- b. 2.5%
- c. 0.25%
- d. 0.000025%
- e. Not given

4.  $6 \div \frac{2}{3} =$

- a. 9
- b.  $\frac{9}{2}$
- c. 4
- d.  $\frac{1}{2}$
- e. Not given

5.  $0.3(0.08) =$

- a. 0.24
- b. 0.38
- c. 2.4
- d. 0.024
- e. Not given

6.  $\frac{2}{5} + \frac{1}{10} =$

- a.  $\frac{1}{2}$
- b.  $\frac{1}{5}$
- c.  $\frac{3}{10}$
- d.  $\frac{3}{15}$
- e. Not given

7.  $2^3 \cdot 5 =$

- a. 30
- b. 40
- c. 100
- d. 1000
- e. Not given

8. If three-fourths of a number is 30, then the number is

- a. 44
- b. 36
- c. 20
- d. 48
- e. Not given

9.  $2 - 10 + 3 =$

- a. 11
- b. 15
- c. -5
- d. 5
- e. Not given

10. If a rectangle's length is 18 feet and its width is 6 feet, then its perimeter in feet is

- a. 108
- b. 24
- c. 54
- d. 48
- e. Not given

11.  $(-5)(4)(-2) =$

- a. 40
- b. -20
- c. -40
- d. -22
- e. Not given

12.  $3[2 - (7 + 1)] =$

- a. 0
- b. -12
- c. -18
- d. -2
- e. Not given

13.  $3x + 12y + 4x - 6y =$

- a.  $7x + 18y$
- b.  $7x^2 - 6y^2$
- c.  $13xy$
- d.  $7x + 6y$
- e. Not given

14. If  $x = 5$  and  $y = 4$ , then  $xy - 2x =$

- a. -10
- b. 10
- c. 29
- d. 2
- e. Not given

15. If  $2x - 5 = 7$ , then  $x =$

- a. 6
- b. 1
- c. -6
- d. 3
- e. Not given

16.  $-3(2x + 8) =$

- a.  $-6x + 24$
- b.  $-6x + 8$
- c.  $-6x - 24$
- d.  $-30x$
- e. Not given

17.  $\frac{6x+1}{5} + \frac{2x+6}{5} =$

- a.  $\frac{8x+7}{10}$
- b.  $\frac{8x+7}{5}$
- c.  $\frac{8x^2+7}{10}$
- d.  $\frac{12x^2+38x+6}{25}$
- e. Not given

18.  $(x + 3)(2x - 1) =$

- a.  $3x + 2$
- b.  $2x^2 - 3$
- c.  $2x^2 + 5x - 3$
- d.  $2x^2 + 7x - 3$
- e. Not given

19. If  $x = -3$ , and  $y = -2$ , then  $x \cdot y^2 =$

- a. 36
- b. -36
- c. -12
- d. 12
- e. Not given

20. Factor and reduce  $\frac{10x+5}{6x+3}$

- a.  $\frac{5}{6}$
- b.  $\frac{5}{3}$
- c.  $\frac{15x}{18x}$
- d.  $\frac{5x+5}{3x+3}$
- e. Not given

21. If  $x - 1 < 5 - 2x$ , then

- a.  $x < \frac{1}{2}$
- b.  $x < 4$
- c.  $x > \frac{1}{2}$
- d.  $x > \frac{3}{2}$
- e. Not given

22. If  $2(\frac{1}{3}x + 5) = 6$ , then  $x =$

- a. 24
- b. 2
- c.  $-\frac{14}{3}$
- d. -6
- e. Not given

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

- a.  $\frac{5}{6x}$
- b.  $\frac{3}{5x}$
- c.  $\frac{3}{x}$
- d.  $\frac{3}{2x^2}$
- e. Not given

24. Factor completely  $5x^2 - 20$

- a.  $(5x + 10)(x - 2)$
- b.  $5(x^2 - 4)$
- c.  $5(x + 2)(x - 2)$
- d.  $5(x - 2)(x - 2)$
- e. Not given

25.  $\frac{5^{-2}}{2^{-1}} =$

- a. 5      b.  $-\frac{2}{25}$       c.  $\frac{25}{2}$   
d.  $\frac{2}{25}$       e. Not given

26.  $\sqrt{75} =$

- a.  $3\sqrt{5}$   
b.  $5\sqrt{3}$   
c.  $5\sqrt{5}$   
d.  $7\sqrt{5}$   
e. Not given

27. The solutions of  $x^2 + 5x - 24 = 0$  are

- a. 8, 3  
b. -8, -3  
c. -8, 3  
d. -3, 8  
e. Not given

28. The slope of the line passing through points (0, -8) and (-5, 2) is

- a. -4  
b. 2  
c. -2  
d. 4  
e. Not given

29. If the denominator is rationalized,  $\frac{10}{\sqrt{5}} =$

- a.  $2\sqrt{5}$   
b.  $\sqrt{2}$   
c.  $\sqrt{5}$   
d.  $\frac{1}{2}$   
e. Not given

30.  $\left(\frac{3x^{-1}}{6xy^2}\right)^{-2} =$

- a.  $\frac{1}{x^2y^2}$       b.  $4x^4y^4$       c.  $-x^2y^2$   
d.  $\frac{4}{x^2y^2}$       e. Not given

31. If  $\sqrt{3x - 2} = 5$ , then  $x =$

- a. 5  
b. -4  
c. 9  
d. No solution  
e. Not given

32. The slope of the line determined by  $5y - 4x = 2$  is

- a. -4  
b. 5  
c. 4  
d.  $\frac{4}{5}$   
e. Not given

33. If  $f(x) = x^2 + 2$ , then  $f(x + 3) =$

- a.  $x^2 + 6x + 11$   
b.  $x^2 + 5$   
c.  $x^2 + 11$   
d.  $x^3 + 3x^2 + 2x + 6$   
e. Not given

34.  $\log_2 8 =$

- a. 4  
b. 3  
c.  $\frac{1}{2}$   
d. undefined  
e. Not given

35. For the angles in Quadrant III, the function which is positive is

- a. sine      b. tangent      c. cosine      d. secant      e. Not given

36. If  $\cos(\alpha) = 0.4$  and  $\sin(\alpha) = 0.9$ , then  $\tan(\alpha) =$

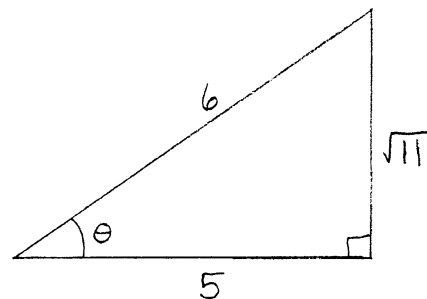
- a. 0.13      b.  $\frac{0.4}{0.9}$       c.  $\frac{0.9}{0.4}$       d.  $\frac{1}{0.36}$       e. Not given

37. The radian measure of an angle measuring  $90^\circ$  is

- a.  $\frac{\pi}{6}$       b.  $\frac{\pi}{2}$       c.  $\frac{\pi}{3}$       d.  $\pi$       e. Not given

38. The sine of  $\theta$  in the triangle is

- a.  $\frac{5}{6}$       b.  $\frac{\sqrt{11}}{5}$       c.  $\frac{6}{5}$   
d.  $\frac{\sqrt{11}}{6}$       e. Not given



39. Recall the identity  $\sin^2 x + \cos^2 x = 1$ . Assume  $\sin x = \frac{1}{4}$  and  $x$  is in Quadrant I. The value of  $\cos x$  is

- a.  $\frac{\sqrt{15}}{4}$       b.  $\frac{1}{\sqrt{2}}$       c.  $\frac{3}{4}$       d.  $\frac{15}{16}$       e. Not given

40. The period of the wave shown is

- a.  $-2\pi$   
b.  $2\pi$   
c.  $4\pi$   
d.  $6\pi$   
e. Not given

