

MIAMI DADE COLLEGE  
INTERAMERICAN CAMPUS  
DEPARTMENT OF MATHEMATICS  
MAT 0020  
STUDY GUIDE

ADDING AND SUBTRACTING INTEGERS AND POLYNOMIALS

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the perimeter of the following.

1) A rectangle measuring 2 in by 9 in

- A) 8 in                      B) 11 in                      C) 14 in                      D) 22 in

Simplify.

2)  $4 \cdot 10 - 3 \cdot 8$

- A) 224                      B) 16                      C) 296                      D) 960

3)  $6^3 \div 8 - 5$

- A) 8                      B) 72                      C) 213                      D) 22

4)  $9 \cdot 7 - (11 - 8) \div 3 - (10 - 7)$

- A) 17                      B) 59                      C) 45                      D) 10

5)  $\frac{5 \cdot (6 + 5) + 5 \cdot 8}{5 \cdot (7 - 1)}$

- A)  $\frac{95}{34}$                       B)  $\frac{160}{17}$                       C) 2                      D)  $\frac{19}{6}$

Find the area.

6) Find the area of a rectangle measuring 3.2 yd by 24.11 yd.

- A) 154.304 yd<sup>2</sup>                      B) 27.31 yd<sup>2</sup>                      C) 77.152 yd<sup>2</sup>                      D) 10.24 yd<sup>2</sup>

Find the volume.

7) Of a rectangular solid with a length of 6 inches, a width of 5 inches, and a height of 2 feet.

- A) 360 in.<sup>3</sup>                      B) 720 in.<sup>3</sup>                      C) 588 in.<sup>3</sup>                      D) 60 in.<sup>3</sup>

Evaluate.

8)  $10 - (11 - 7)$

- A) 14                      B) -8                      C) 6                      D) 28

9)  $\frac{9x - 11y}{x + 10}$      $x = 4, y = 3$

- A)  $\frac{3}{14}$                       B)  $\frac{3}{13}$                       C)  $\frac{17}{13}$                       D)  $\frac{17}{14}$

10)  $4x + 5y$      $x = 1, y = -3$

- A) -19                      B) 19                      C) -60                      D) -11

Add.

11)  $[2 + (-3)] + (-6 + 8)$

- A) 1                      B) -15                      C) 19                      D) 13

- 12)  $[-9 + (-24)] + [(-19) + (-25)]$   
 A) -21                                      B) -11                                      C) -77                                      D) -59

Solve the problem.

- 13) The temperature at the South pole was  $-13^\circ$  at 8 am. At 3 pm, it was  $19^\circ$ . By how many degrees did the temperature rise?  
 A) by  $6^\circ$                                       B) by  $32^\circ$                                       C) by  $-6^\circ$                                       D) by  $-32^\circ$
- 14) Find the volume of a circular cone with height 8 in. and radius 3 in. Use 3.14 for  $\pi$ . Round your answer to the nearest whole number, if necessary.  
 A)  $75 \text{ in.}^3$                                       B)  $113 \text{ in.}^3$                                       C)  $50 \text{ in.}^3$                                       D)  $151 \text{ in.}^3$

Write as a subtraction problem and evaluate.

- 15) The difference of 19 and  $-6$   
 A)  $19 - (-6)$ ; 25                                      B)  $6 - 19$ ; -13                                      C)  $-6 - 19$ ; -25                                      D)  $19 - (-6)$ ; 13
- 16) 19 less than the difference of 8 and  $-3$   
 A)  $(8 - 3) - 19$ ; -14                                      B)  $[8 - (-3)] - 19$ ; -8                                      C)  $19 - [8 - (-3)]$ ; 8                                      D)  $[8 - (-3)] - 19$ ; -14
- 17)  $-5x$  added to the difference of  $4x$  and  $-15x$   
 A)  $-5x + [4x - (-15x)]$ ;  $6x$                                       B)  $-5x + [4x - (-15x)]$ ;  $-16x$   
 C)  $-5x + [4x - (-15x)]$ ;  $-24x$                                       D)  $-5x + [4x - (-15x)]$ ;  $14x$

Find the area of the circle. Use 3.14 or  $\frac{22}{7}$  for  $\pi$  as indicated.

- 18) Find the area of the circle. Round the answer to the nearest tenth of a unit.



- A)  $78.5 \text{ mi}^2$                                       B)  $490.6 \text{ mi}^2$                                       C)  $157 \text{ mi}^2$                                       D)  $1962.5 \text{ mi}^2$

Write an equivalent numerical expression and evaluate.

- 19) The sum of  $-7$  and  $-11$ , increased by  $-12$   
 A)  $[(-7) + (-11)] + (-12)$ ;  $-30$                                       B)  $[7 + 11] + 12$ ;  $30$   
 C)  $[(-7) + (-11)] + 12$ ;  $-6$                                       D)  $[(-7) + (-11)] + (-12)$ ;  $-16$

Combine like terms.

- 20)  $3m^2 + 2m - 12m^2 + 11m$   
 A)  $-9m^2 - 13m$                                       B)  $9m^2 - 13m$                                       C)  $9m^2 + 13m$                                       D)  $-9m^2 + 13m$
- 21)  $7x - 9y + 9 - 11x - 4 - 4y$   
 A)  $4x - 5y + 5$                                       B)  $4x - 13y + 5$                                       C)  $-4x - 13y + 5$                                       D)  $-4x - 5y + 5$

Perform the indicated operation.

22)  $(6n^5 + 3n^2 - 12) - (2n^5 + 11n^2 - 14) + (n^6 + 4)$

A)  $n^6 + 4n^5 - 8n^2 - 22$

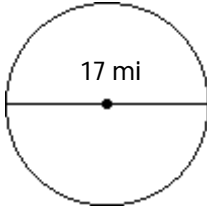
C)  $2n^7$

B)  $n^6 + 4n^5 + 5n^2 - 22$

D)  $n^6 + 4n^5 - 8n^2 + 6$

Find the circumference of the circle. Use 3.14 or  $\frac{22}{7}$  for  $\pi$  as indicated.

23) Find the circumference. Round the answer to the nearest tenth of a unit.



A) 53.4 mi

B) 226.9 mi

C) 26.7 mi

D) 106.8 mi

Evaluate the polynomial.

24)  $-2x^2 - 5x - 4$  for  $x = -2$

A) 10

B) -6

C) -2

D) -12

Insert  $<$ ,  $>$ , or  $=$  between the pair of numbers to make the statement true.

25)  $-7$     $-6$

A)  $=$

B)  $<$

C)  $>$