HOMEWORK EXERCISES (TIME: 10 MINUTES)

26. Jessie hopes to be able to do two more push-ups each day this week than she did the previous day. On Sunday, Jessie does 36 push-ups. If she meets her goal, how many push-ups in total will she have done from Sunday through the following Saturday?

    (A) 48
    (B) 50
    (C) 252
    (D) 264
    (E) 294

27. The Fibonacci Sequence is a sequence of integers in which the first two terms are both 1, and each successive term is the sum of the *two* terms immediately preceding it. Thus, the first five terms are 1, 1, 2, 3, 5. What is the ninth term of this sequence?

    (A) 17
    (B) 21
    (C) 34
    (D) 55
    (E) 181

28. Which of the following could be part of an arithmetic sequence?

    (A) $1, 1, 2, 3, \ldots$
    (B) $-37, -5, 27, 58, \ldots$
    (C) $5, -7, -19, -31, \ldots$
    (D) $-1, 0, 1, 0, \ldots$
    (E) $1, -1, 1, -1, \ldots$

29. Find the eleventh term of the following sequence:

    $$1, 4, -1, 6, -3, 8, \ldots$$

    (A) -11
    (B) -9
    (C) -7
    (D) 12
    (E) 14

30. The fourth term of an arithmetic sequence is 17, and the seventh term is -1. What is the common difference between consecutive terms?

    (A) -18
    (B) -8
    (C) -6
    (D) 16
    (E) 18

31. The tenth term of an arithmetic sequence is 19 times the first term, and the common difference between consecutive terms is 4. What is the value of the fifth term?

    (A) 2
    (B) 4
    (C) 6
    (D) 16
    (E) 18

32. Find the first term of the geometric sequence with $a_3 = 4.5$ and $a_4 = -2.7$.

(A) -9.9
(B) 1.62
(C) 7.5
(D) 12.5
(E) 18.9

33. The first term of an arithmetic sequence is a, and the sixth term is b. In terms of a and b, what is the value of the third term?

(A) $\frac{3a+2b}{5}$
(B) $\frac{5a+2b}{5}$
(C) $\frac{2b-2a}{5}$
(D) $b - 4a$
(E) $\frac{2a+b}{3}$

34. What numbers should be placed in the two blanks below so that the common ratio of consecutive terms is constant?

48, ___, ___, 162

(A) $54, 60.75$
(B) $54, 144$
(C) $86, 124$
(D) $72, 114$
(E) $72, 108$

35. The first term a_1 of a geometric sequence is equal to the common ratio r. If the sum of the first four terms is 10, and the sum of the first three terms is -6, then a_1 could equal:

(A) 2 only
(B) -2 only
(C) 2 or -2
(D) 1 only
(E) 1 or 2