Sample Questions and Answers:

1. What is the average (arithmetic mean) of the numbers 15, 16, 17, 17, 18, and 19?

   (A) 14.2
   (B) 16.5
   (C) 17
   (D) 17.5
   (E) 18

2. Kathy bought 4 times as many shares in Company *X* as Carl, and Carl bought 3 times as many shares in the same company as Tom. Which of the following is the ratio of the number of shares bought by Kathy to the number of shares bought by Tom?

   (A) $\dfrac{3}{4}$

   (B) $\dfrac{4}{3}$

   (C) $\dfrac{3}{1}$

   (D) $\dfrac{4}{1}$

   (E) $\dfrac{12}{1}$

3. Of the following, which if closest to $\dfrac{0.15 \times 495}{9.97}$?

   (A) 7.5
   (B) 15
   (C) 75
   (D) 150
   (E) 750

4. A manager has $6,000 budgeted for raises for 4 full-time and 2 part-time employees. Each of the full-time employees receives the same raise, which is twice the raise that each of the part-time employees receives. What is the amount of the raise that each full-time employee receives?

   (A) $750
   (B) $1,000
   (C) $1,200
   (D) $1,500
   (E) $3,000

5. $x^2 - (\dfrac{x}{2})^2 =$

   (A) $x^2 - x$

   (B) $\dfrac{x^2}{4}$

(C) $\dfrac{x^2}{2}$

(D) $\dfrac{3x^2}{4}$

(E) $\dfrac{3x^2}{2}$

6. A hospital pharmacy charges \$0.40 per fluidram of a certain medicine but allows a discount of 15 percent to Medicare patients. How much should the pharmacy charge a Medicare patient for 3 fluidounces of the medicine?(128 fluidrams = 16 fluidounces)

(A) \$9.60
(B) \$8.16
(C) \$3.20
(D) \$2.72
(E) \$1.02

7. $(-1)^2 - (-1)^3 =$

(A) –2
(B) –1
(C) 0
(D) 1
(E) 2

8. At a certain bowling alley, it costs \$0.50 to rent bowling shoes for the day and \$1.25 to bowl 1 game. If a person has \$12.80 and must rent shoes, what is the greatest number of complete games that person can bowl in one day?

(A) 7
(B) 8
(C) 9
(D) 10
(E) 11

9. If $\dfrac{x}{y} = 2$, then $\dfrac{x-y}{x} =$

(A) –1

(B) $-\dfrac{1}{2}$

(C) $\dfrac{1}{2}$

(D) 1

(E) 2

10. If each photocopy of a manuscript costs 4 cents per page, what is the cost, in cents, to reproduce x copies of an x-page manuscript?

(A) $4x$
(B) 16x
(C) x2
(D) 4x2

(E) 16x2

11. Ken left a job paying $75,000 per year to accept a sales job paying $45,000 per year plus 15 percent commission. If each of his sales is for $750, what is the least number of sales he must make per year if he is not to lose money because of the change?

(A) 40
(B) 200
(C) 266
(D) 267
(E) 600

MONTHLY KILOWATT-HOURS

	500	1,000	1,500	2,000
Present	$24.00	$41.00	$57.00	$73.00
Proposed	$26.00	$45.00	$62.00	$79.00

12. The table above shows present rates and proposed rates for electricity for residential customers. For which of the monthly kilowatt-hours shown would the proposed rate be the greatest percent increase over the present rate?

(A) 500
(B) 1,000
(C) 1,500
(D) 2,000
(E) Each of the percent increases is the same.

13. If *a*, *b*, and *c* are three consecutive odd integers such that $10<a<b<c<20$ and if *b* and *c* are prime numbers, what is the value of $a + b$?

(A) 24   (B) 28   (C) 30
(D) 32   (E) 36

14. Of a group of people surveyed in a political poll, 60 percent said that they would vote for candidate *R*. Of those who said they would vote for *R*, 90 percent actually voted for *R*. and of those who did not say that they would vote for R. 5 percent actually voted for *R*. What percent of the group voted for *R*?

(A) 56%   (B) 59%   (C) 62%
(D) 65%   (E) 74%

15. If $r = 1 + \dfrac{1}{3} + \dfrac{1}{9} + \dfrac{1}{27}$ and $s = 1 + \dfrac{1}{3} r$, then *s* exceeds *r* by

(A) $\dfrac{1}{3}$ (B) $\dfrac{1}{6}$ (C) $\dfrac{1}{9}$

(D) $\dfrac{1}{27}$ (E) $\dfrac{1}{81}$
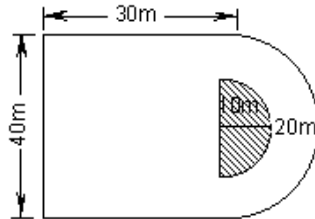
16. $\dfrac{0.025 \times \dfrac{15}{2} \times 48}{5 \times 0.0024 \times \dfrac{3}{4}} =$

(A) 0.1

(B) 0.2
(C) 100
(D) 200
(E) 1,000

17. A student responded to all of the 22 questions on a test and received a score of 63.5. If the scores were derived by adding 3.5 points for each correct answer and deducting 1 point for each incorrect answer, how many questions did the student answer <u>incorrectly</u>?

(A) 3
(B) 4
(C) 15
(D) 18
(E) 20

18. The figure above represents a rectangular parking lot that is 30 meters by 40 meters and an attached semicircular driveway that has an outer radius of 20 meters and an inner radius of 10 meters. If the shaded region is <u>not</u> included, what is the area, in square meters, of the lot and driveway?

(A) 1,350 π
(B) 1,200 + 400 π
(C) 1,200 + 300 π
(D) 1,200 + 200 π
(E) 1,200 + 150 π

19. One-fifth of the light switches produced by a certain factory are defective. Four-fifths of the defective switches are rejected and $\frac{1}{20}$ of the nondefective switches are rejected by mistake. If all the switches not rejected are sold, what percent of the switches sold by the factory are defective?

(A) 4%
(B) 5%
(C) 6.25%
(D) 11%
(E) 16%
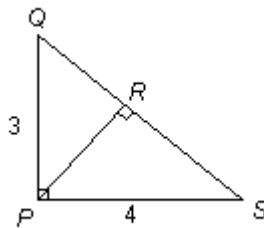
20. In △ PQS above, if PQ = 3 and PS = 4, then PR =

(A) $\dfrac{9}{4}$

(B) $\dfrac{12}{5}$

(C) $\dfrac{16}{5}$

(D) $\dfrac{15}{4}$

(E) $\dfrac{20}{3}$

Answers:

1. C
2. E
3. A
4. C
5. D
6. B
7. E
8. C
9. C
10. D
11. D
12. B
13. D
14. A
15. E
16. E
17. A
18. E
19. B
20. B