1. What is 28% of 600?

   (A)   0.47

   (B)   21.42

   (C)   168

   (D)   2,142

   (E)   16,800

2. 15 is what percent of 500?

   (A)   0.03

   (B)   3

   (C)   33

   (D)   75

   (E)   7,500

3. 65 is 20 percent of what number?

   (A)   0.31

   (B)   3.25

   (C)   13

   (D)   325

   (E)   1,300

4. 300 is what percent of 15?

   (A)   4.5

   (B)   20

   (C)   45

   (D)   450

   (E)   2000

6. Diana chose a new pair of shoes marked $120, and the store is having a sale of 20% off everything. How much will she pay for the shoes (excluding sales tax)?

   (A) $24

   (B) $96

   (C) $114
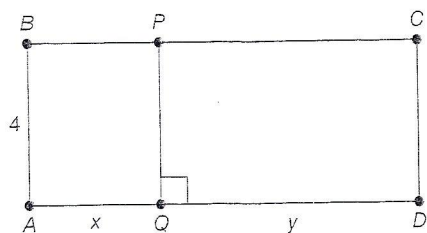
   (D) $144

   (E) $240

7. Two years ago the average rainfall was 30 inches. If it has increased by 15% per year since then, what is the average annual rainfall now?

   (A)   30.0

   (B)   34.5

   (C)   39.0

   (D)   39.7

   (E)   67.5

400. Triangle A and triangle B are equilateral triangles such that the ratio of the length of one side of triangle A to the length of one side of triangle B is 6 to 7. If the perimeter of triangle A is 9, what is the length of a single side of triangle B?

(A) $\dfrac{2}{3}$

(B) $\dfrac{7}{2}$

(C) 12

(D) 18

(E) 21

401. In the following figure, $ABCD$ is a rectangle such that $\dfrac{x}{y} = \dfrac{1}{5}$. If the area of $ABPQ$ is 12, what is the area of $ABCD$?
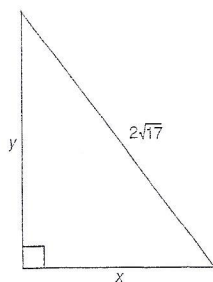

(A) 32

(B) 56

(C) 60

(D) 72

(E) 112

402. The ratio of x to y is 2 to 3. If the sum of x and y is 125, what is the value of x?

(A) 15

(B) 25

(C) 50

(D) 75

(E) 100

403. Which of the following represents 0.2% of $\dfrac{1}{5}$?

(A) $\dfrac{1}{25,000}$

(B) $\dfrac{1}{2500}$

(C) $\dfrac{1}{250}$

(D) $\dfrac{1}{25}$
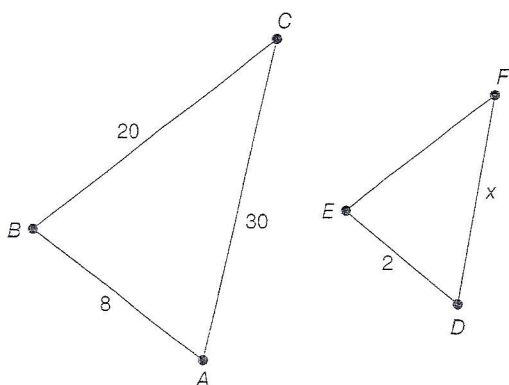
(E) $\dfrac{1}{10}$

405. Every student enrolled in a science course is either a physics major or a biology major. If the ratio of physics majors to biology majors is 3 to 1 and there are 21 physics majors enrolled, how many biology majors are enrolled in the course?

(A) 7

(B) 15

(C) 23

(D) 45

(E) 63

407. The value of a positive number x is 30% of the value of a positive number y. If 20% of y is 8, what is the value of x?

(A) 10

(B) 12

(C) 16

(D) 40

(E) 70

410. If the length of one side of a square is 28% of 50, then the area of the square is equal to

(A) 70

(B) 84

(C) 140

(D) 196

(E) 289

411. If q% of 30 is 21, then $q =$

(A) 50

(B) 60

(C) 70

(D) 80

(E) 90

413. Of 600 items in a storage closet, 40% are pens or pencils, 10% are first-aid items, and 5% are notebooks. How many items in the storage closet have not been described?

(A) 45

(B) 60

(C) 240

(D) 270

(E) 300

364. A rectangle has a width of 5 meters and a length of 14 meters. If a similar rectangle has a width of 15 meters, what is its perimeter, in meters?

(A) 42

(B) 58

(C) 60

(D) 78

(E) 114

416. In the following figure, the ratio of x to y is 1:4. What is the value of x?

(A) 1

(B) 2

(C) 8

(D) 10

(E) 13

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367. In the following figure, triangles ABC and DEF are similar. What is the value of x?

Note: Image not to scale

(A) 5.0

(B) 7.5

(C) 15.0

(D) 24.0

(E) 36.5

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361. If M% of 135 is 54, then $M =$

(A) 2.5

(B) 4

(C) 25

(D) 40

(E) 81

---

362. In a large company, the ratio of full-time to part-time employees is 3:2. If there are 800 total employees, how many are part-time?

(A) 260

(B) 320

(C) 400

(D) 480

(E) 530

373. In an election with two parties, Party A won 54% of the votes. If Party B received 874 votes, how many votes were cast in total?

(A) 400
(B) 472
(C) 1619
(D) 1900
(E) 2102

374. Each side of square A has a length of 3 meters, while each side of square B has a length of 9 meters. What is the ratio of the area of square A to the area of square B?

(A) 1:1
(B) 1:3
(C) 1:6
(D) 1:9
(E) 1:12

375. The ratio of the lengths of each of the sides of a triangle is 4:12:14. If the shortest side has a length of 2 feet, what is the perimeter of the triangle in feet?

(A) 15
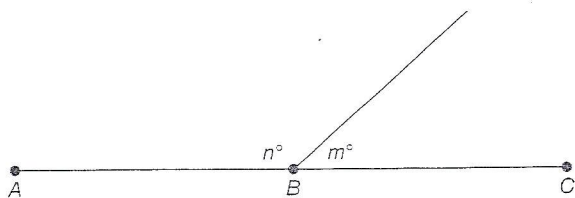(B) 24
(C) 34
(D) 57
(E) 68

376. In a college with 14,000 students, 490 are majoring in mathematics. What percentage of the student body does the number of math majors represent?

(A) 0.0035%
(B) 0.035%
(C) 0.35%
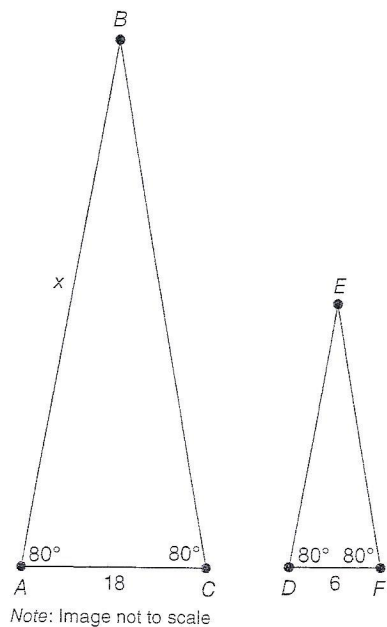(D) 3.5%
(E) 35%

369. If 80% of $x + 1$ is 2, then $x =$

(A) 0.975
(B) 1.25
(C) 1.5
(D) 4
(E) 5.1

417. Points A, B, and C in the following figure are collinear. If the ratio of m to n is 2:3, what is the value of n in degrees?
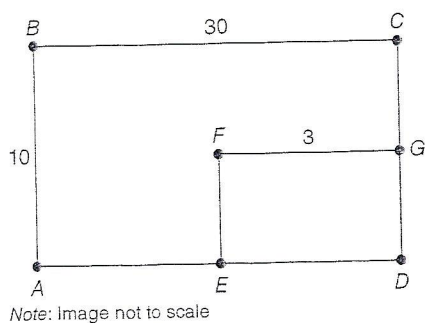

(A) 36
(B) 94
(C) 108
(D) 120
(E) 170

398. The triangles in the following figure are similar. In terms of x, what is the perimeter of triangle DEF?

Note: Image not to scale

(A) $\dfrac{x}{6} + 6$

(B) $\dfrac{x}{3} + 6$

(C) $\dfrac{2x}{3} + 6$

(D) $2x + 6$

(E) $6x + 6$

378. In the following figure, rectangles $ABCD$ and $EFGD$ are similar. What is the perimeter of $EFGD$?
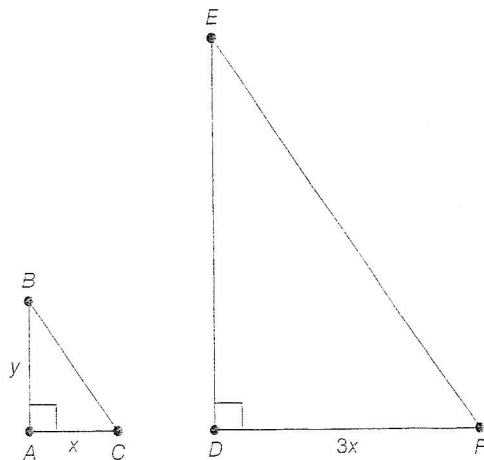

Note: Image not to scale

(A) 4

(B) 8

(C) 26

(D) 30

(E) 40

425. A tenant's monthly rent of \$675 will be increased by 3% every year. To the nearest cent, what will be the tenant's monthly rent in 3 years?

(A) \$695.25

(B) \$735.75

(C) \$737.59

(D) \$781.02

(E) \$794.66

384. The length of a rectangle is 40% larger than its width. If the area of the rectangle is 140 square feet, what is the width of the rectangle in feet?

(A) 10

(B) 22

(C) 35

(D) 56

(E) 64

385. In the following figure, triangles ABC and DEF are similar. Which of the following expressions represents the area of DEF in terms of x and y?

(A) $\dfrac{xy}{2}$

(B) $\dfrac{3xy}{2}$

(C) $3xy$

(D) $\dfrac{9xy}{2}$

(E) $6xy$

389. If the ratio of x to y is 1:6, what is the difference between y and x when $x =$ 12?

(A) 5

(B) 12

(C) 17

(D) 60

(E) 72

380. If 80% of a number is 122, what is 40% of the number?

(A) 48.8

(B) 61.0

(C) 73.2

(D) 83.0

(E) 244.0