1.) What property is illustrated by $3(6 + 11) = 3(6) + 3(11)$?
   (a) Commutative     (b) Associative     (c) Distributive     (d) Identity

2.) $3 \times 8 \div 4 \times 6$ is (a) 1 (b) 11 (c) 9 (d) 36

3.) The width of a rectangle is 38 cm. If the perimeter is 300 cm then the length is
   (a) 188 cm      (b) 75 cm      (c) 112 cm      (d) 262 cm

4.) What is the value of $w^x + x^w$ if $w = 2$ and $x = 3$ ?
   (a) 12       (b) 17       (c) 31       (d) 15

5.) Find the equation listed below that has a positive integer solution other than 2.
   (a) $2x + 3 = 4$      (b) $3x - 1 = 5$      (c) $\frac{1}{2}x + \frac{7}{8} = \frac{5}{8}$      (d) $0.4x + 3.2 = 6$

6.) $0.24$ in lowest terms is (a) $\frac{24}{100}$ (b) $\frac{6}{25}$ (c) $\frac{24}{99}$ (d) $\frac{8}{33}$

7.) If $-9u = 54$ then $u$ is (a) 6 (b) $-6$ (c) $-486$ (d) 63

8.) Translate: “the square of the product of 3 and a, increased by a”.
   (a) $3a^2 + a$      (b) $(3a)^2 + a$      (c) $(3a + a)^2$      (d) $3a^2 \cdot a$

9.) An equation to find the dimensions of a rectangle with perimeter 120 cm, and whose length is 4 times its width, is
   (a) $2 \cdot w \cdot 4w = 120$      (b) $2w + 4w = 120$      (c) $w + 4w = 120$      (d) $2(w + 4w) = 120$

10.) If $\frac{y}{16} - \frac{1}{8} = \frac{1}{4}$ then $y$ is (a) 2 (b) 4 (c) 6 (d) 8

11.) The factors of 60 include (a) 2, 4, 5, 9, 10 (b) 120, 180, 300 (c) 2, 3, 4, 5, 10 (d) 100, 200, 300

12.) The prime factorization of 198 is (a) $2 \cdot 9 \cdot 11$ (b) $2 \cdot 3^2 \cdot 11$ (c) $18 \cdot 11$ (d) $6 \cdot 3 \cdot 11$

13.) Choose the group that contains only prime numbers
   (a) 2, 5, 19, 47, 57      (b) 3, 5, 13, 23, 51      (c) 2, 3, 13, 37, 59
   (d) 2, 5, 39, 47, 59

14.) Find LCM(18, 30) (a) 30 (b) 90 (c) 540 (d) 6

15.) Find GCF(175, 300) (a) 25 (b) 90 (c) 2100 (d) 5100

16.) Simplify $3(2a - 5) + a$ (a) $6a - 15$ (b) $5a - 5$ (c) $7a - 15$ (d) $-8a$

17.) Find $x$ if $2(3x - 5) + (5x + 3) = 26$ (a) 3 (b) $28/11$ (c) 33 (d) 34

18.) Five-sixths of a number is one-third of the number, increased by 1/2. Find the number.
   (a) 6 (b) 12 (c) 3 (d) 1

GO TO PAGE 2
19.) If six times a number is increased by three, the result is the same as twice the number, increased by 19. What is the number?
(a) 4  (b) 5 1/2  (c) 8 3/4  (d) 10

20.) Solve for v: \( \frac{1}{3}(6v - 9) - \frac{1}{2}(8v - 4) = 0 \)
(a) 1  (b) 2  (c) 0  (d) \(-1/2\)

21.) Convert 0.675 to a reduced fraction.
(a) 25/37  (b) 27/40  (c) 0.675/1000  (d) 2/3

22.) The sum of three numbers is 161. The second number is 7 more than the first, and the third number is 5 times the first. Find the second number.
(a) 22  (b) 110  (c) 29  (d) 81

23.) Convert 0.235 to a reduced fraction.
(a) 233/990  (b) 233/900  (c) 235/999  (d) 47/200

24.) The sum of two consecutive integers is 105. They are
(a) 51 and 54  (b) 52 and 53  (c) 1 and 104  (d) 5 and 21

25.) Write \( \frac{21}{40} \) as a percent
(a) 5.25%  (b) 52.5%  (c) 0.525%  (d) 21%

26.) Find the length of a diagonal of a rectangle which is 20 m wide and 21 m long.
(a) 41 m  (b) 29 m  (c) 82 m  (d) 420 m

27.) The base of a triangle is 15 cm and its height is 8 cm. The area of the triangle is
(a) 23 cm²  (b) 17 cm²  (c) 60 cm²  (d) 46 cm²

28.) We might simplify the ratio of 9 months to two years as
(a) 3 to 8  (b) 3 to 4  (c) 2 to 9  (d) 9 to 2

29.) The circumference of a circle of radius 10 ft is about
(a) 31.42 ft  (b) 314.2 ft  (c) 78.5 ft  (d) 62.83 ft

30.) The area of a circle of radius 10 ft is about
(a) 31.42 ft²  (b) 314.2 ft²  (c) 78.5 ft²  (d) 62.83 ft²

Answers: 1c, 2d, 3c, 4b, 5d, 6d, 7b, 8b, 9d, 10c, 11c, 12b, 13c, 14b, 15a, 16c, 17a, 18d, 19a, 20d, 21b, 22c, 23a, 24b, 25b, 26b, 27c, 28a, 29d, 30b