Pre Algebra Assessment
Name: **Date:**   **Score:**

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. Simplify $5x^3 + 5(6x^3 - 5b^4)$. Justify your steps using the Commutative, Associative, and Distributive Properties when necessary.
    a. $35x^6 - 25b^4$ c. $35x^3 - 5b^4$
    b. $35x^3 - 25b^4$ d. $5x^3 - 55x^3b^4$

_____ 2. Which expression simplifies to 5?
    a. $4 + 9 \div 3 - 2$ b. $60 - 5 \times 11 + 7$

_____ 3. Which is a solution for the equation $3n = 60$?
    a. $n = 20$ c. $n = 12$
    b. $n = 56$ d. $n = 36$

_____ 4. Which expression simplifies to 6?
    a. $6 + 12 \times 2 - 18$ c. $28 \div (7 \times 2) - 2$
    b. $25 - 10 \div 5 + 3$ d. $18 - (15 \div 3 + 7)$

_____ 5. Add. Express your answer in simplest form.
$$\frac{5}{12} + \frac{1}{12}$$
    a. $\dfrac{6}{12}$ c. $\dfrac{1}{2}$
    b. $\dfrac{6}{24}$ d. $\dfrac{1}{4}$

_____ 6. Which is a solution for the equation $w + 7 = -15$?
    a. $w = -8$ c. $w = -22$
    b. $w = 8$ d. $w = 22$

_____ 7. Which statement is true?
    a. $8 \div (-2) = 4$
    b. $-20 \div 4 = 5$
    c. $-14 \div (-7) = -2$
    d. $15 \div (-5) = -3$

_____ 8. Which is an example of the Commutative Property of Multiplication?
    a. $72 + 9 = 9 + 72$ c. $57 \times 1 = 57$
    b. $(8 \times 7) \times 4 = 8 \times (7 \times 4)$ d. $38 \times 5 = 5 \times 38$

_____ 9. Beth bought 25 trading cards of which 19 were sports cards. Which decimal shows what portion of the cards were sports cards?
    a. 0.76   b. 1.316

_____ 10. Which fraction is equivalent to 0.625?

- a. $\frac{1}{8}$
- b. $\frac{3}{8}$
- c. $\frac{5}{8}$
- d. $\frac{7}{8}$

_____ 11. The scale on a floor plan is 1 in. : 8 ft. What actual distance is represented by a distance of 2.6 inches on the floor plan?

- a. 36 feet
- b. 20.8 feet
- c. 24 feet

_____ 12. A survey found that 3 out of 20 people enjoyed going to the dentist. Which angle measure should be used in a circle graph to display this quantity?

- a. 3°
- b. 15°
- c. 30°
- d. 54°

_____ 13. Which ratio is equivalent to the ratio 4 to 9?

- a. $\frac{5}{10}$
- b. $\frac{12}{18}$
- c. 16:36
- d. 2:3

_____ 14. Which of the following ratios forms a proportion with $\frac{2}{5}$?

- a. $\frac{16}{40}$
- b. $\frac{10}{30}$
- c. $\frac{12}{25}$
- d. $\frac{12}{35}$

_____ 15. Which of these prices is lower than 5 for $3.00?

- a. 6 for $3.72
- b. 7 for $4.06
- c. 8 for $5.44
- d. 12 for $7.20

_____ 16. A packing machine can pack 2,500 boxes in 4 hours. At what rate does the machine work?

- a. 312 boxes/hour
- b. 575 boxes/hour
- c. 625 boxes/hour
- d. 10,000 boxes/hour

_____ 17. Match the proportion with its solution.

$$\frac{3}{2} = \frac{t}{18}$$

- a. 27
- b. 2
- c. 5

____ 18. Keith is given the following math problem to solve.

Enya has \$160 in her bank account. During March, she earns \$7.50 per hour baby-sitting. After depositing her earnings in the account, she has \$340. How many hours did Enya baby-sit in March?

Keith used the numeric method below to solve the problem. Which algebraic solution matches his numeric method?

1) Subtract 160 from 340 to find the amount Enya earned during March.
2) Divide the result by 7.5 to find the number of hours Enya spent baby-sitting.

a. $160 + 7.5h = 340$

$\underline{-160 \qquad = -160}$

$7.5h = 180$

$h = \dfrac{180}{7.5}$

c. $h + (7.5)160 = 340$

$\underline{-160 = -160}$

$h + 7.5 = 180$

$h = \dfrac{180}{7.5}$

b. $7.5h - 160 = 340$

$\underline{+160 = +160}$

$7.5h = 500$

$h = \dfrac{500}{7.5}$

d. $160h + 7.5 = 340$

$\underline{-160 \qquad = -160}$

$h + 7.5 = 180$

$h = \dfrac{180}{7.5}$

____ 19. A triangle has sides with lengths of $2x - 7$, $5x - 3$, and $2x - 2$. What is the perimeter of the triangle?
   a. $9x - 12$
   b. $5x - 12$
   c. $-x - 6$
   d. $-3x$

____ 20. Marcus hikes at a rate of 2 miles per hour. If he hikes for $6\frac{1}{3}$ hours, how many miles will he hike?
   a. $12\frac{1}{3}$ miles
   b. 14 miles
   c. $12\frac{2}{3}$ miles
   d. $8\frac{1}{3}$ miles

Pre Algebra Assessment
Answer Section

MULTIPLE CHOICE

    1. ANS: B   PTS: 1   REF: 94781c3b-9631-11dd-8a40-001185f11039
        OBJ: Simplifying Algebraic Expressions   NAT: NT.CCSS.MTH.10.7.7.EE.1
        LOC: MTH.C.10.02.002 | MTH.C.10.05.02.02.018   TOP: Simplifying Algebraic Expressions
        DOK: DOK 2
    2. ANS: A   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.EE.1
        DOK: DOK 2
    3. ANS: A   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.EE.4
        DOK: DOK 1
    4. ANS: D   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.EE.1
        DOK: DOK 2
    5. ANS: C   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.NS.1
        DOK: DOK 1
    6. ANS: C   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.EE.4
        DOK: DOK 1
    7. ANS: D   PTS: 1   REF: M1.11.EN.ST.07
        NAT: NT.CCSS.MTH.10.7.7.NS.2.b   LOC: NCTM 6-8.NOP.2.a | NCTM 6-8.NOP.2.b
        KEY: division | integers   DOK: DOK 1
    8. ANS: D   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.NS.2.c
        DOK: DOK 1
    9. ANS: A   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.NS.2.d
        DOK: DOK 2
  10. ANS: C   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.NS.2.d
        DOK: DOK 2
  11. ANS: B   PTS: 1   REF: M2.08.EN.CTA.25
        NAT: NT.CCSS.MTH.10.7.7.RP.2   STA: CA.CACS.MTH.97.7.G.1.2
        LOC: NCTM 6-8.MEA.2.e | NCTM 6-8.NOP.1.d   KEY: scale drawings
        DOK: DOK 1
  12. ANS: D   PTS: 1   REF: M3.12.EN.ST.02
        NAT: NT.CCSS.MTH.10.7.7.RP.2   LOC: NCTM 6-8.DAP.1.b | NCTM 6-8.REP.1
        KEY: circle graph | angle | proportion | circle   DOK: DOK 2
  13. ANS: C   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.RP.2.a
        DOK: DOK 2
  14. ANS: A   PTS: 1   REF: MLC10437   NAT: NT.CCSS.MTH.10.7.7.RP.2.a
        TOP: Writing and Solving Proportions   KEY: ratio | proportion
        DOK: DOK 1
  15. ANS: B   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.RP.2.b
        DOK: DOK 1
  16. ANS: C   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.RP.2.b
        DOK: DOK 1
  17. ANS: A   PTS: 1   REF: M2.08.EN.CTA.15
        NAT: NT.CCSS.MTH.10.7.7.RP.2.c   LOC: NCTM 6-8.NOP.3.d
        KEY: solving proportions   DOK: DOK 1
  18. ANS: A   PTS: 1   REF: 9103f61d-6ab2-11e0-9c90-001185f0d2ea

OBJ: Comparing Solution Methods   NAT: NT.CCSS.MTH.10.7.7.EE.4.a
TOP: Examine Solution Methods   KEY: numeric method | algebraic method | problems solving
DOK: DOK 3

19. ANS: A   PTS: 1   NAT: NT.CCSS.MTH.10.7.7.EE.1
DOK: DOK 2

20. ANS: C   PTS: 1   REF: 958587b9-9631-11dd-8a40-001185f11039
NAT: NT.CCSS.MTH.10.7.7.NS.3   TOP: Multiplying Fractions and Mixed Numbers
DOK: DOK 2