TB(2A) Ch. 3 Algebraic Fractions and Formulas
Multiple Choice Questions

1. **[11-12 F.2 Mid-year #5]**

    Consider the formula $Y = \dfrac{e(2.5 + f)^n}{f}$. Find the value of e when $Y = -10$, $f = -\dfrac{1}{2}$ and $n = 3$.

    A. 0.185   **B.** 0.625

    C. 0.833   **D.** 2.5

2. **[11-12 F.2 Mid-year #6]**

    If $\dfrac{1}{a} = b - c$, which of the following are correct?

    I. $a = \dfrac{1}{b} - \dfrac{1}{c}$ II. $a = \dfrac{1}{b - c}$

    III. $b = \dfrac{1 - ac}{a}$ IV. $c = \dfrac{ba - 1}{a}$

    A.   I and III only

    B.   I and IV only

    C.   II and III only

    D.   II and IV only

3. **[11-12 F.2 Mid-year #7]**

    Which of the following cannot be the value of x in the algebraic fraction $\dfrac{x - 1}{2x + 6}$?

    A. -3 **B.**   0

    C.   1   **D.**   3

4. **[11-12 F.2 Mid-year #19]**

    $\dfrac{1}{1 - x^2} - \dfrac{1}{(1 + x)^2} =$

    A. $\dfrac{2}{(1 - x)^2}$

    B. $\dfrac{4x}{(1 - x^2)^2}$

    C. $\dfrac{2}{(1 - x)(1 + x)^2}$

    D. $\dfrac{2x}{(1 - x)(1 + x)^2}$

5. **[11-12 F.2 Final Exam #3]**

If $y - 1 = \dfrac{y - 2x}{9}$, then $x =$

   A. $\dfrac{9 - 8y}{2}$.

   B. $\dfrac{8y - 9}{2}$.

   C. $\dfrac{9(y - 1)}{2}$.

   D. $\dfrac{9 - 8y}{-2}$.

6. **[12-13 S.2 Final Exam #11]**

   Make e the subject of $f = \dfrac{1}{2e + ef}$.

   A. $e = f^2 + 2f$

   B. $e = \dfrac{f}{f + 2}$

   C. $e = \dfrac{1}{2 + f^2}$

   D. $e = \dfrac{1}{f^2 + 2f}$

7. **[12-13 S.2 Mid-year #10]**

   Simplify $-\dfrac{x}{y} - \left(\dfrac{-x}{2y} + \dfrac{-x}{4y} \right)$.

   A. $-\dfrac{x}{4y}$ B. $-\dfrac{3x}{4y}$

   C. $\dfrac{5x}{4y}$ D. $\dfrac{7x}{4y}$

8. **[12-13 S.2 Mid-year #15]**

   Make n the subject of $\dfrac{a}{b} = \dfrac{m - n}{1 - mn}$.

   A. $n = \dfrac{a - bm}{am - b}$ B. $n = \dfrac{a - bm}{am + b}$ C. $n = \dfrac{bm - a}{am - b}$ D. $n = \dfrac{bm - a}{am + b}$

9. **[12-13 S.2 Mid-year #16]**

   Simplify $\dfrac{4x-2}{2-3x} \times \dfrac{9x^2-12x+4}{4x^2-1} \div \dfrac{-6x^2+x+2}{2x+1}$.

   A. $-\dfrac{1}{x+1}$ **B.** $-\dfrac{2}{2x+1}$

   C. $\dfrac{2}{2x-1}$ **D.** $\dfrac{2}{2x+1}$

10. **[12-13 S.2 Mid-year #4]**

   The sum of the first n square numbers is given by the formula $S = \dfrac{n}{6}(n+1)(2n+1)$. Find the sum of the first 11 square numbers.

   A. 285 **B.** 506
   C. 598 **D.** 650

11. **[13-14 S.2 Mid-year #5]**

   Consider the formula $D = b^2 - 4ac$. Find the value of c when $a = 2$, $b = -3$ and $D = 17$.

   A. -8 **B.** -4
   C. -1 **D.** 1

12. **[13-14 S.2 Mid-year #7]**

   $\dfrac{1}{2(x-1)} + \dfrac{1}{4x} =$

   A. $\dfrac{3x-1}{2x(x-1)}$. **B.** $\dfrac{3x-1}{4x(x-1)}$.

   C. $\dfrac{5x-1}{4x(x-1)}$. **D.** $\dfrac{x+1}{2x(x-1)}$.

13. **[13-14 S.2 Mid-year #9]**

   $1 - \dfrac{2a}{a-b} =$

   A. 1. **B.** $\dfrac{a+b}{a-b}$.

   C. $-\dfrac{a+b}{a-b}$.

   D. $\dfrac{a+b}{-a-b}$.

14. [13-14 S.2 Mid-year #12]

Make c the subject of $a = \dfrac{bc-1}{b(c-3)}$.

A. $\dfrac{3a-1}{b(a-1)}$ 　　　 B. $\dfrac{3b-1}{b(a-1)}$

C. $\dfrac{3ab-1}{b(a+1)}$ 　　　 D. $\dfrac{1-3ab}{b(1-a)}$

15. [13-14 S.2 Mid-year #16]

$\dfrac{x^2-22x+121}{25-x^2} \times \dfrac{2x+10}{242-2x^2} \div \dfrac{1}{x+11} =$

A. $\dfrac{x+11}{x-5}$. 　　　 B. $\dfrac{x-11}{5-x}$.

C. $\dfrac{x-11}{x+5}$. 　　　 D. $\dfrac{x-11}{x-5}$.

16. [13-14 S.6 Mock exam #3]

If $g = \dfrac{\pi^2 r}{9T^2}$, where $T > 0$, then $T =$

A. $\dfrac{\pi}{3}\sqrt{\dfrac{r}{g}}$. 　　 B. $\dfrac{\pi}{3}\sqrt{\dfrac{g}{r}}$ 　　 C. $3\pi\sqrt{\dfrac{r}{g}}$. 　 D. $3\pi\sqrt{\dfrac{g}{r}}$.

17. [13-14 S.2 Final Exam #15]

Make f the subject of the formula $\dfrac{1}{e} = \dfrac{1}{f-1} - \dfrac{1}{g}$.

A. $f = e + g + 1$

B. $f = \dfrac{e+g}{eg} + 1$

C. $f = \dfrac{eg - e + g}{e+g}$

D. $f = \dfrac{e+g+eg}{e+g}$

18. [13-14 S.6 Mock Exam #3]

If $g = \dfrac{\pi^2 r}{9T^2}$, where $T > 0$, then $T =$

A. $\dfrac{\pi}{3}\sqrt{\dfrac{r}{g}}$.

B. $\dfrac{\pi}{3}\sqrt{\dfrac{g}{r}}$.

C. $3\pi\sqrt{\dfrac{r}{g}}$.

D. $3\pi\sqrt{\dfrac{g}{r}}$.

19. [14-15 Mid-year Exam]

Simplify $\dfrac{x-1}{x+1} + \dfrac{6}{3x+3}$.

A. $\dfrac{x-1}{x+1}$　　　B. $\dfrac{1}{3}$

C. 1　　　D. $\dfrac{x-1}{3(x+1)}$

20. [14-15 Mid-year Exam]

Make u the subject of the formula $s = ut + \dfrac{1}{2}at^2$.

A. $u = s - \dfrac{1}{2}at^2 - t$

B. $u = \dfrac{s}{t} - \dfrac{1}{2}at^2$

C. $u = \dfrac{s}{t} - \dfrac{1}{2}at$

D. $u = \dfrac{2s}{at^3}$

21. [14-15 Mid-year Exam]

If $\dfrac{a}{b} - c = z(a-1)$, which of the following   is/are true?

I. $a - bc = bz(a-1)$

II. $bza - a = bc + bz$

III. $a = \dfrac{b(c+z)}{bz-1}$

A.   I only

B.   II only

C.   I and II only

D.   All of the above

22. [14-15 Mid-year Exam]

Simplify $\dfrac{\dfrac{1}{y} - \dfrac{1}{x}}{x+y} \div \dfrac{x^2 - y^2}{x^3 y + x^2 y^2}$.

A. $\dfrac{1}{x^2 y(x+1)}$ B. $\dfrac{x^2 y}{(x+y)(x-y)^2}$

C. $\dfrac{x(x+y)}{y(x-y)}$ D. $\dfrac{x}{x+y}$

23.   [14-15 S.6 Mock Exam #4]

If $(m-2)(n+3) = n$ and $m \neq 3$, then $n =$

A. $\dfrac{2}{m-3}$.

B. $\dfrac{3(m-2)}{3-m}$.

C. $\dfrac{m-2}{3-m}$.

D. $\dfrac{3(m-2)}{2}$.

24. [14-15 S.2 Final Exam #14]

$\dfrac{a-b}{ab} + \dfrac{b-c}{bc} + \dfrac{c-a}{ca} =$

A. 0 .   B. $\dfrac{a+b+c}{abc}$.

C. $\dfrac{a-b-c}{abc}$.   D. $\dfrac{2(a+b+c)}{abc}$.

25. [15-16 S.2 Mid-year #9]

$$\frac{9}{x-3}+\frac{x^2}{3-x}=$$

    A. $-x-3$ **B.** $x-3$

    C. $x+3$ **D.** $\dfrac{9+x^2}{x-3}$

26. [15-16 S.2 Mid-year #10]

Make a the subject of the formula $b+1=\dfrac{2+a}{a}$.

    A. $a=\dfrac{2}{b}$ **B.** $a=\dfrac{b}{2}$ **C.** $a=\dfrac{1}{b-1}$ **D.** $a=\dfrac{b-1}{2}$

27. [15-16 S.2 Mid-year #20]

Given the formulas $a=\dfrac{3r-1}{r}$ and $b=\dfrac{2r-1}{r}$. Express b in terms of a.

    A. $b=a-1$

    B. $b=\dfrac{2a-1}{a}$

    C. $b=\dfrac{3a-1}{a}$

    D. $b=\dfrac{2a-1}{3a-1}$

28. [15-16 S.2 Final Exam #13]

Make a the subject of the formula $\dfrac{1}{a}+\dfrac{b}{c+2}=\dfrac{3}{2a}$.

    A. $a=-\dfrac{c+2}{2b}$ **B.** $a=-\dfrac{c+2}{b}$

    C. $a=\dfrac{c+2}{b}$ **D.** $a=\dfrac{c+2}{2b}$

~ End ~