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

1. [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

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

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

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

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

3. [13-14 S.2 Mid-year #9]

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

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

C. $-\frac{a+b}{a-b}$. **D.** $\frac{a+b}{-a-b}$.

4. [13-14 S.2 Mid-year #12]

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

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

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

5. [13-14 S.2 Mid-year #16]

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

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

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

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

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

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

7. [13-14 S.2 Final Exam #15]

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

A. $f = e + g + 1$

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

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

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

8. [13-14 S.6 Mock Exam #3]

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

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

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

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

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

9. [14-15 Mid-year Exam]

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

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

C. 1 **D.** $\frac{x-1}{3(x+1)}$

10. [14-15 Mid-year Exam]

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

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

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

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

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

11. [14-15 Mid-year Exam]

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

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

II. $bza - a = bc + bz$

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

A. I only
B. II only
C. I and II only
D. All of the above

12. [14-15 Mid-year Exam]

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

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

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

13. [14-15 S.6 Mock Exam #4]

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

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

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

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

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

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

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

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

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

15. [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.** $\frac{9+x^2}{x-3}$

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

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

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

17. [15-16 S.2 Mid-year #20]

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

A. $b=a-1$

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

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

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

18. [15-16 S.2 Final Exam #13]

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

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

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

19. [16-17 F.2 Mid-year #5]

Simplify $\frac{24a^6b^8}{8a^2b^4}$.

A. $16a^3b^2$

B. $16a^4b^4$

C. $3a^3b^2$

D. $3a^4b^4$

20. [16-17 F.2 Mid-year #6]

If $2x + 3y = 4$, then $y =$

A. $\frac{4-2x}{3}$. **B.** $\frac{4+2x}{3}$.

C. $\frac{3}{4-2x}$. **D.** $\frac{3}{4+2x}$.

21. [16-17 F.2 Mid-year #17]

$\frac{4u+3v}{2u-v}-5=$

A. $\frac{-3u+8v}{u-v}$.

B. $\frac{-6u+4v}{2u-v}$.

C. $\frac{-3u+4v}{u-v}$.

D. $\frac{8v-6u}{2u-v}$.

22. [16-17 F.2 Mid-year #18]

Simplify $\dfrac{a^2-b^2}{(a-b)^2}\div\dfrac{(a+b)^2}{a^3+b^3}$.

A. $\dfrac{a^2-ab+b^2}{a-b}$

B. $a+b$

C. $\dfrac{(a+b)^2}{a-b}$

D. $\dfrac{a^2-ab+b^2}{a+b}$

23. [16-17 F.2 Final Exam #3]

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

A. $\dfrac{1}{x-1}$.

B. $\dfrac{1}{1-x}$.

C. $\dfrac{x}{x-1}$.

D. $\dfrac{x}{1-x}$.

24. [16-17 F.2 Final Exam #6]

If $\sqrt{a}=9$ and $\sqrt{b}=2$, then $\sqrt{a-b}=$

A. $\sqrt{7}$.

B. $\sqrt{77}$.

C. $3-\sqrt{2}$.

D. $2-\sqrt{3}$.

25. [17-18 F.2 Mid Year Exam #5]

Given that $D = b^2 - 4ac$, find the value of D when $a = -3$, $b = -2$ and $c = -1$.

A. -8 B. 8

C. 16 D. -16

26. [17-18 F.2 Mid Year Exam #13]

$$\frac{1}{x+2y}-\frac{1}{x-2y}=$$

A. $\frac{2x}{x^2-4y^2}$. **B.** $\frac{2x}{4y^2-x^2}$.

C. $\frac{4y}{x^2-4y^2}$. **D.** $\frac{4y}{4y^2-x^2}$.

27. [17-18 F.2 Mid Year Exam #14]

If $y = \frac{1+x}{1-x}$, then $x =$

A. $\frac{y-1}{y+1}$. **B.** $\frac{y+1}{y-1}$. **C.** $\frac{1-y}{1+y}$. **D.** $\frac{1+y}{1-y}$.

28. [17-18 F.2 S Test #6]

Which of the following is/are formula(e)?

I. $2x + 2 = 1$

II. $x = \pi$

III. $D = a^2 - 4ac$

A. I only

B. II only

C. III only

D. II and III only

29. [17-18 F.2 S Test #9]

$$\frac{x^2-18x+81}{x^2-9}\div\frac{243-3x^2}{3x+9}\times(x-3)=$$

A. $\frac{x-9}{x+9}$.

B. 1.

C. $\frac{9-x}{9+x}$.

D. $\frac{x+9}{x-9}$.

30. [17-18 F.2 Final Exam #2]

$\dfrac{x+1}{1-x} \div \dfrac{x}{x-1} =$

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

B. $\dfrac{x+1}{x}$.

C. 2.

D. 0.

31. [17-18 F.2 Final Exam #13]

If $h = 3 - \dfrac{5+k}{k}$, then $k =$

A. $\dfrac{5}{4-h}$.

B. $\dfrac{5}{2-h}$.

C. $\dfrac{h+5}{2}$.

D. $\dfrac{h+5}{4}$.

32. [17-18 F.2 Final Exam #14]

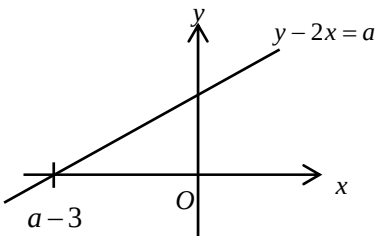
The figure shows the graph of the equation $y - 2x = a$. Find the value of a.

A. 2.

B. 1.

C. 0.

D. -1.



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