MATHS

BOOKS - KAPLAN INC MATHS (ENGLISH)

ALGEBRA

Example

1. If $a = b^3$, and $b = \frac{\sqrt{5}}{c}$, what is the value of a when $c = \frac{1}{3}$?

A. 0.42

B. 1.89

C. 60.37

D. 301.87

Answer: D

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2. For all $def \neq 0$, $\frac{4d^3e^4f^2}{(2de^3f)^2} =$

A. $2de^2$

B. $2de^{-2}$

C. de^{2}

D. de^{-2}

Answer: D

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3. When $4g^3 - 3g^2 + g + k$ is divided by $g - 2$, the remainder is 27. What is the value of k ?

A. 3

B. 5

C. 8

D. 12

Answer: B

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4. For all $h \neq \pm 4$, $\dfrac{3h^2 - 9h - 12}{16 - h^2} =$

A. $\dfrac{-3(h+1)}{(h-4)}$

B. $\dfrac{3(h-1)}{(h-4)}$

C. $\frac{-3(h+1)}{(h+4)}$

D. $\frac{(h+1)}{3(h+4)}$

Answer: C

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5. If $\sqrt[3]{5j-7} = -\frac{1}{2}$, what is the value of j ?

A. 1.375

B. 2.118

C. 2.599

D. 5.125

Answer: A

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6. If $\frac{7}{m-\sqrt{3}} = \frac{\sqrt{3}}{m} + \frac{4}{2m}$, what is the value of m ?

A. -3.464

B. -1.978

C. -0.918

D. 1.978

Answer: B

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7. If $9^n = 27^{n+1}$, then $2^n =$

A. $-\frac{10}{3}$

B. $-\frac{8}{3}$

C. $-\frac{3}{8}$

D. $\frac{1}{8}$

Answer: D

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8. If $p = \frac{\sqrt{q} + z}{r^2 + z}$, what is the value of z in terms of p, q, and r ?

A. $\frac{p - r^2\sqrt{q}}{p - 1}$

B. $\frac{pr^2 - \sqrt{q}}{r^2}$

C. $\sqrt{\frac{p + qr}{r^2}}$

D. $\frac{\sqrt{q} - pr^2}{p - 1}$

Answer: D

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9. If $3s + 5t = 10$, and $2s - t = 7$, what is the value of $\frac{1}{2^s} + 3t$?

A. 0

B. 1.5

C. 2.8

D. 3.4

Answer: B

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10. Which of the following is the solution set of $\left|\frac{2}{3}u - 5\right| > 8$?

A. $\left\{u: -\frac{39}{2} < u < \frac{9}{2}\right\}$

B. $\left\{u: -\frac{9}{2} < u < \frac{39}{2}\right\}$

C. $\left\{u: u > \frac{39}{2} \text{ or } u < -\frac{9}{2}\right\}$

D. $\left\{u: u > \frac{9}{2} \text{ or } u < -\frac{39}{2}\right\}$

Answer: C

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Algebra Follow Up Test

1. If $a = 6 - b^3$ and $b = -2$, what is the value of a ?

A. -8

B. -2

C. 2

D. 14

Answer: D

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2. For all z, $3^z + 3^z + 3^z$ =

A. $3^z + 3$

B. 3^{z+1}

C. 3^{z+3}

D. 3^{3z}

Answer: B

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3. For all $c \neq \pm \frac{1}{5}$, $\frac{5c^2 - 24c - 5}{1 - 25c^2} =$

A. $\frac{5c + 1}{5 + c}$

B. $\frac{5 + c}{5c + 1}$

C. $-\frac{5c - 1}{5 - c}$

D. $\frac{5 - c}{5c - 1}$

Answer: D

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4. When $2f^3 + 3f^2 - 1$ is divided by $f + 2$, the remainder is

A. -9

B. -5

C. -1

D. 2

Answer: B

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5. If $\sqrt[5]{\frac{g-1}{4}} = \frac{1}{3}$, then g =

A. 0.984

B. 0.996

C. 1.004

D. 1.016

Answer: D

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6. If $\frac{37}{4\sqrt{j}-19}=\frac{37}{17}$, then j =

A. 64

B. 72.25

C. 81

D. 90.25

Answer: C

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7. If $5^{k^2}\left(25^{2k}\right)(625) = 25\sqrt{5}$ and $k < -1$, what is the value of k ?

A. -3.581

B. -3.162

C. -2.613

D. -1.581

Answer: A

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8. If $n \neq 3p$, and $s = \dfrac{n^2 + p}{n - 3p}$, what is the value of p in terms of n and s ?

A. $\dfrac{n^2 - ns}{1 - 3s}$

B. $\dfrac{ns + n^2}{3s + 1}$

C. $-\dfrac{ns - n^2}{3s + 1}$

D. $-\dfrac{n^2 - ns}{3s + 1}$

Answer: D

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9. Which of the following can be a solution to the pair of equations $2q - rt = 21$ and $q + rt = 36$?

A. q = 18 and t = 2

B. q = 19 and t = 1

C. q = 20 and t = -1

D. q = 21 and t = -2

Answer: B

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10. How many integers are in the solution set $|2x + 6| < \frac{19}{2}$?

A. None

B. Two

C. Nine

D. Fourteen

Answer: C

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