**1** **What is the complete solution to the equation $|3-6x|=15$?**

**A** $x=2; x=3$

**B** $x=-2; x=3$

**C** $x=2; x=-3$

**D** $x=-2; x=-3$

CST00507

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**2** **What are the possible values of $x$ in $|12-4x|=2$?**

**A** $x=-2.50$ or $x=-3.50$

**B** $-3.50<x<-2.50$

**C** $3.5>x>2.5$

**D** $x=2.50$ or $x=3.50$

CST20085

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**3** **For a wedding, Shereda bought several dozen roses and several dozen carnations. The roses cost $15 per dozen, and the carnations cost $8 per dozen. Shereda bought a total of 17 dozen flowers and paid a total of $192. How many roses did she buy?**

**A** 6 dozen

**B** 7 dozen

**C** 8 dozen

**D** 9 dozen

CST00099

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**4** **What is the solution to the system of equations shown below?**

$$\begin{cases} 2x-y+3z=8 \\ x-6y-z=0 \\ -6x+3y-9z=24 \end{cases}$$

**A** $(0,4,4)$

**B** $\left(1,4,\frac{10}{3}\right)$

**C** no solution

**D** infinitely many solutions

CST00203

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**5** **A restaurant manager bought 20 packages of bagels. Some packages contained 6 bagels each, and the rest contained 12 bagels each. There were 168 bagels in all. How many packages of 12 bagels did the manager buy?**

**A** 6

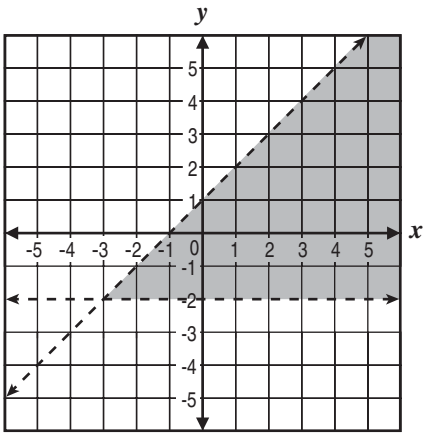
**B** 8

**C** 9

**D** 12

CST00491

**6** **What system of inequalities *best* represents the graph shown below?**




**A** $y > -2$ and $y > x + 1$

**B** $y > -2$ and $y < x + 1$

**C** $y < -2$ and $y > x + 1$

**D** $y < -2$ and $y < x + 1$

CST00500

**7** **Which point lies in the solution set for the system** $\begin{cases} 2y - x \geq -6 \\ 2y - 3x < -6 \end{cases}$ **?**

**A** $(-4, -1)$

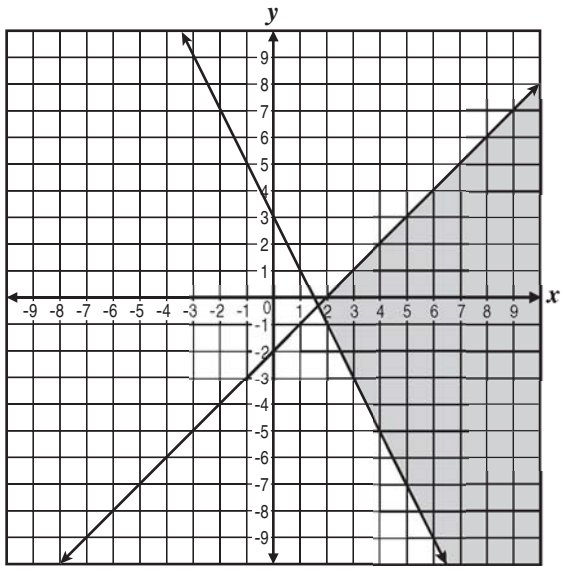
**B** $(3, 1)$

**C** $(0, -3)$

**D** $(4, 3)$

CST10059

**8** **Which system of linear inequalities is represented by this graph?**




**A** $\begin{cases} y \geq \frac{1}{2}x + 3 \\ y \geq x - 2 \end{cases}$

**B** $\begin{cases} y \geq 2x + 3 \\ y \leq x - 2 \end{cases}$

**C** $\begin{cases} 2x - y \geq 3 \\ x + y \leq 2 \end{cases}$

**D** $\begin{cases} 2x + y \geq 3 \\ x - y \geq 2 \end{cases}$

CST20079

**9** $2x+7\overline{)2x^4+21x^3+35x^2-37x+46}$

**A** $x^3+7x^2-7x+6-\frac{4}{2x+7}$

**B** $2x^3+14x^2-14x+12-\frac{4}{2x+7}$

**C** $x^3-7x^2+7x-6+\frac{4}{2x+7}$

**D** $x^3+7x^2-7x+6+\frac{4}{2x+7}$

CST00109

**10** **Which polynomial represents $(3x^2+x-4)(2x-5)$?**

**A** $6x^3-13x^2-13x-20$

**B** $6x^3-13x^2-13x+20$

**C** $6x^3+13x^2+3x-20$

**D** $6x^3+13x^2+3x+20$

CST10024

**11** $(-2x^2+6x+1)-2(4x^2-3x+1)=$

**A** $6x^2-1$

**B** $-10x^2-1$

**C** $6x^2+12x-1$

**D** $-10x^2+12x-1$

CST00233

**12** **Which expression is equivalent to $(6y^2-2)(6y+2)$?**

**A** $36y^2-4$

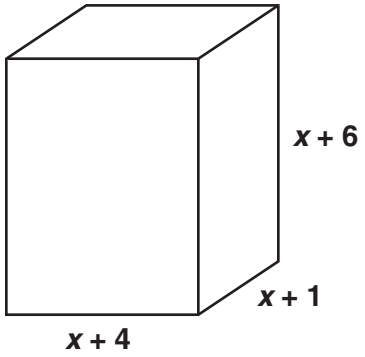
**B** $36y^3-4$

**C** $36y^2+12y^2+12y-4$

**D** $36y^3+12y^2-12y-4$

CST20008

**13** **What is the volume of the figure below?**




**A** $x^3+10x^2+34x+24$

**B** $x^3+11x^2+34x+24$

**C** $x^3+10x^2+24x+24$

**D** $x^3+11x^2+24x+24$

CST10285

**14** $8a^3+c^3=$

**A** $(2a+c)(2a+c)(2a+c)$

**B** $(2a-c)(4a^2+2ac+c^2)$

**C** $(2a-c)(4a^2+4ac+c^2)$

**D** $(2a+c)(4a^2-2ac+c^2)$

CST00118

**15** **The total area of a rectangle is $4x^4 - 9y^2$. Which factors could represent the length times width?**

**A** $(2x^2 - 3y)(2x^2 + 3y)$

**B** $(2x^2 + 3y)(2x^2 + 3y)$

**C** $(2x - 3y)(2x - 3y)$

**D** $(2x + 3y)(2x - 3y)$

CST10028

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**16** **Which product of factors is equivalent to $(x+1)^2 - y^2$?**

**A** $(x + 1 + y)^2$

**B** $(x + 1 - y)^2$

**C** $(x - 1 + y)(x - 1 - y)$

**D** $(x + 1 + y)(x + 1 - y)$

CST10030

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**17** **Which expression shows the complete factorization of $12x^2 - 147$?**

**A** $(3x - 7)(4x + 2)$

**B** $(4x - 21)(3x + 7)$

**C** $12(x - 7)(x + 7)$

**D** $3(2x - 7)(2x + 7)$

CST20117

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**18** $$\frac{x+3}{x+5} + \frac{6}{x^2+3x-10} =$$

**A** $\dfrac{x^2 + x}{x^2 + 3x - 10}$

**B** $\dfrac{7x - 9}{x^2 + 3x - 10}$

**C** $\dfrac{x^2 + x + 12}{x^2 + 3x - 10}$

**D** $\dfrac{x^2 + x + 1}{x^2 + 3x - 10}$

CST00295

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**19** **Which is a simplified form of $\dfrac{3a^2b^3c^{-2}}{(a^{-1}b^2c)^3}$?**

**A** $\dfrac{3a^5}{b^3c^5}$

**B** $\dfrac{3ab}{c^5}$

**C** $\dfrac{3}{b^2c^5}$

**D** $\dfrac{3}{ab^3c^5}$

CST00267

**20** What is $\frac{20x^{-4}}{27y^2} \div \frac{8x^{-3}}{15y^{-5}}$?

**A** $\frac{32y^3}{81x}$

**B** $\frac{32}{81xy^7}$

**C** $\frac{25y^3}{18x}$

**D** $\frac{25}{18xy^7}$

CST20321

**21** Which product is equivalent to $\frac{4x^2-16}{2-x}$?

**A** $4(x-2)$

**B** $4(x+2)$

**C** $-4(x-2)$

**D** $-4(x+2)$

CST10041

**22** $$\frac{x^2+4x}{x+3} \bullet \frac{x^2-9}{x^2+x-12} =$$

**A** 1

**B** $x$

**C** $x+4$

**D** $\frac{x+3}{x-3}$

CST10043

**23** What is the simplest form of $\frac{5x^3y+20x^2y^2+20xy^3}{5xy}$?

**A** $(x+2)^2$

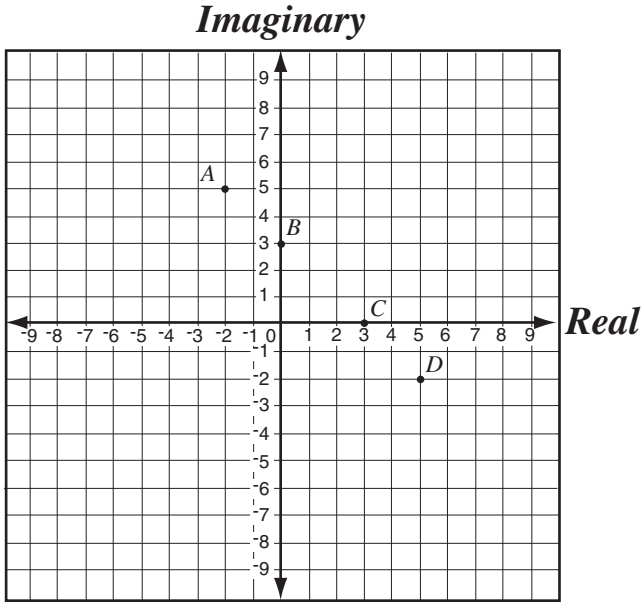
**B** $(x+2y)^2$

**C** $x^2+y^2$

**D** $x^2+4y^2$

CST10049

**24** If $i=\sqrt{-1}$, which point shows the location of $5-2i$ on the plane?




**A** point $A$

**B** point $B$

**C** point $C$

**D** point $D$

CST00510

**25** If $i = \sqrt{-1}$, what is the value of $i^4$?

**A** $i$

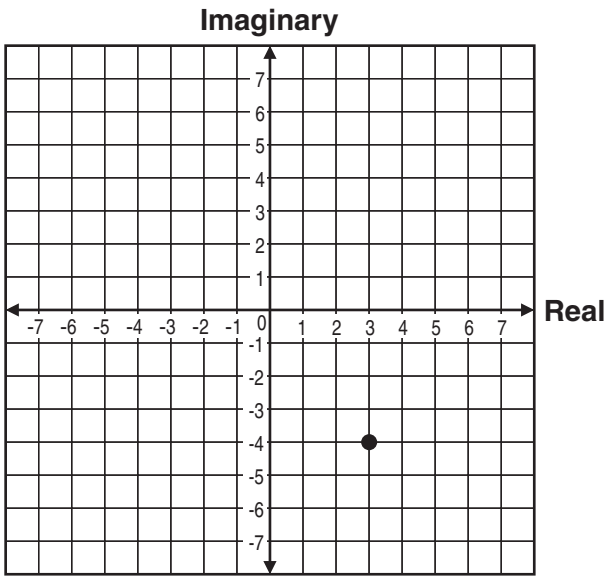
**B** $-i$

**C** 1

**D** $-1$

CST00238

**26** Which of the following complex numbers is represented by the point on the graph below?




**A** $4 + 3i$

**B** $4 - 3i$

**C** $3 - 4i$

**D** $3 + 4i$

CST30142

**27** If $i = \sqrt{-1}$, then $4i(6i) =$

**A** 48

**B** 24

**C** $-24$

**D** $-48$

CST00512

**28** What is an equivalent form of $\frac{2}{3+i}$?

**A** $\frac{3-i}{4}$

**B** $\frac{3-i}{5}$

**C** $\frac{4-i}{4}$

**D** $\frac{4-i}{5}$

CST10040

**29** What is the product of the complex numbers $(3+i)$ and $(3-i)$?

**A** 8

**B** 10

**C** $9 - i$

**D** $10 - 6i$

CST10038

**30** If $i = \sqrt{-1}$ and $a$ and $b$ are non-zero real numbers, what is $\frac{1}{a+bi}$?

**A** $\frac{a+bi}{a^2+b^2}$

**B** $\frac{a-bi}{a^2+b^2}$

**C** $\frac{a+bi}{a^2-b^2}$

**D** $\frac{a-bi}{a^2-b^2}$

CST10371

**31** What are the solutions to the equation $x^2+2x+2=0$?

**A** $x=0; x=-2$

**B** $x=0; x=-2i$

**C** $x=-1+i; x=-1-i$

**D** $x=-1+2\sqrt{2}; x=-1-2\sqrt{2}$

CST00114

**32** What are the solutions to the equation $1+\frac{1}{x^2}=\frac{3}{x}$?

**A** $x=\frac{3}{2}+\frac{\sqrt{5}}{2}; x=\frac{3}{2}-\frac{\sqrt{5}}{2}$

**B** $x=3+\frac{\sqrt{5}}{2}; x=3-\frac{\sqrt{5}}{2}$

**C** $x=\frac{3}{2}+\frac{\sqrt{13}}{2}; x=\frac{3}{2}-\frac{\sqrt{13}}{2}$

**D** $x=3+\frac{\sqrt{13}}{2}; x=3-\frac{\sqrt{13}}{2}$

CST00197

**33** There are two numbers with the following properties.

1) The second number is 3 more than the first number.

2) The product of the two numbers is 9 more than their sum.

Which of the following represents possible values of these two numbers?

**A** $-6, -3$

**B** $-4, -1$

**C** $-1, 4$

**D** $-3, 6$

CST20109

**34** Jenny is solving the equation $x^2-8x=9$ by completing the square. What number should be added to both sides of the equation to complete the square?

**A** 2

**B** 4

**C** 8

**D** 16

CST00508

**35** Which of the following *most* accurately describes the translation of the graph $y=(x+3)^2-2$ to the graph of $y=(x-2)^2+2$?

**A** up 4 and 5 to the right

**B** down 2 and 2 to the right

**C** down 2 and 3 to the left

**D** up 4 and 2 to the left

CST10074

**36** **Which of the following sentences is true about the graphs of $y = 3(x-5)^2 + 1$ and $y = 3(x+5)^2 + 1$?**

**A** Their vertices are maximums.

**B** The graphs have the same shape with different vertices.

**C** The graphs have different shapes with different vertices.

**D** One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.

CST10294

**37** **What are the $x$-intercepts of the graph of $y = 12x^2 - 5x - 2$?**

**A** $1$ and $-\frac{1}{6}$

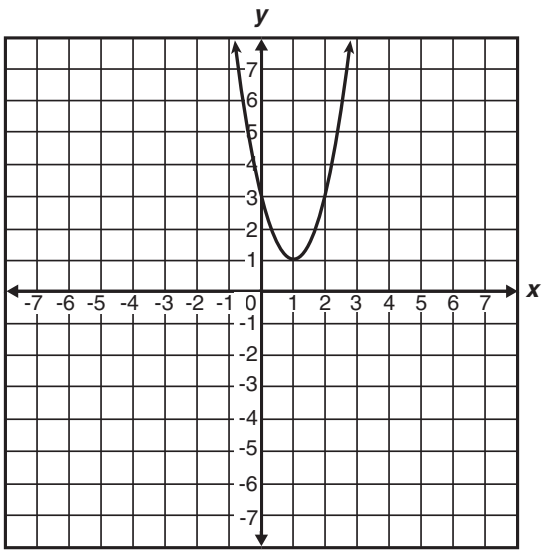
**B** $-1$ and $\frac{1}{6}$

**C** $\frac{2}{3}$ and $-\frac{1}{4}$

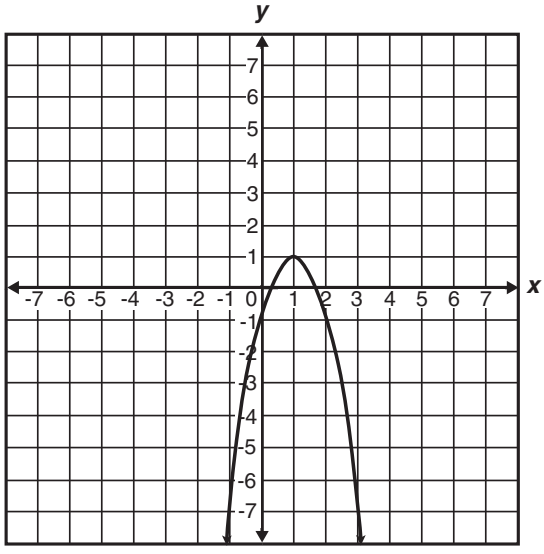
**D** $-\frac{2}{3}$ and $\frac{1}{4}$

CST00297

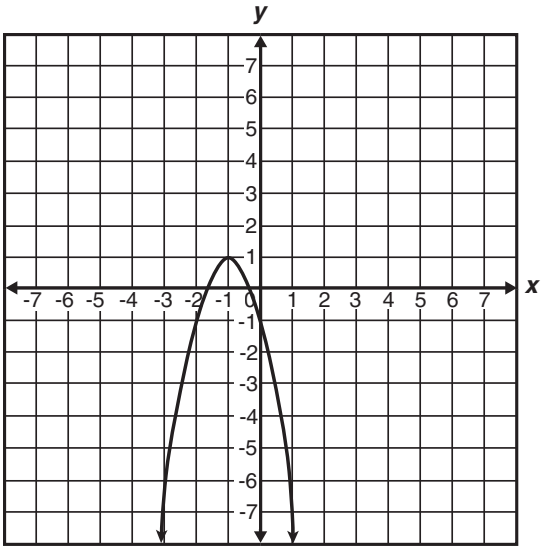
**38** Which is the graph of $y = -2(x-1)^2 + 1$?



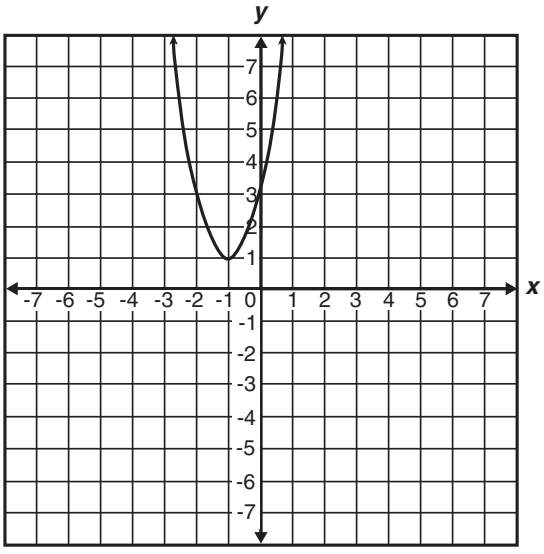

**A**




**C**




**B**




**D**

CST10292

**39** **Which ordered pair is the vertex of $f(x) = x^2 + 6x + 5$?**

**A** $(-3, -4)$

**B** $(-2, -3)$

**C** $(-1, 0)$

**D** $(0, -5)$

CST10084

**40** **The graph of $\left(\frac{x}{2}\right)^2 - \left(\frac{y}{3}\right)^2 = 1$ is a hyperbola. Which set of equations represents the asymptotes of the hyperbola's graph?**

**A** $y = \frac{3}{2}x,\ y = -\frac{3}{2}x$

**B** $y = \frac{2}{3}x,\ y = -\frac{2}{3}x$

**C** $y = \frac{1}{2}x,\ y = -\frac{1}{2}x$

**D** $y = \frac{1}{3}x,\ y = -\frac{1}{3}x$

CST10304

**41** **Which of the following represents a parabola?**

**A** $x^2 + y^2 = r^2$

**B** $\frac{y^2}{a^2} + \frac{x^2}{b^2} = 1$

**C** $4px = y^2$

**D** $\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$

CST20065

**42** $$4x^2 - 5y^2 - 16x - 30y - 9 = 0$$

**What is the standard form of the equation of the conic given above?**

**A** $\frac{(x-4)^2}{11} - \frac{(y-3)^2}{4} = 1$

**B** $\frac{(y+3)^2}{4} - \frac{(x-2)^2}{5} = 1$

**C** $\frac{(y-3)^2}{6} - \frac{(x+2)^2}{9} = 1$

**D** $\frac{(x-4)^2}{11} + \frac{(y-3)^2}{4} = 1$

CST00146

**43** **Which statement describes the graph of the equation $x^2 + y^2 + 4x - 6y - 3 = 0$?**

**A** a hyperbola with center $(-2, 3)$ and vertices $(4, -3)$ and $(-4, 3)$

**B** a hyperbola with center $(-2, 3)$ and vertices $(2, -3)$ and $(3, -2)$

**C** a circle with center $(-2, 3)$ and radius 8

**D** a circle with center $(-2, 3)$ and radius 4

CST20127

**44** **What is the solution to the equation $5^x = 17$?**

**A** $x = 2$

**B** $x = \log_{10} 2$

**C** $x = \log_{10} 17 + \log_{10} 5$

**D** $x = \dfrac{\log_{10} 17}{\log_{10} 5}$

CST00132

**45** **If $\log_{10} x = -2$, what is the value of $x$ ?**

**A** $x = -\sqrt{\dfrac{1}{10}}$

**B** $x = \sqrt{\dfrac{1}{10}}$

**C** $x = \dfrac{1}{100}$

**D** $x = 100$

CST10255

**46** **Which equation is equivalent to $\log_3 \dfrac{1}{9} = x$?**

**A** $\left(\dfrac{1}{9}\right)^3 = x^3$

**B** $\left(\dfrac{1}{9}\right)^3 = x$

**C** $3^x = \dfrac{1}{9}$

**D** $3^{\frac{1}{9}} = x$

CST10151

**47** **Which is the first *incorrect* step in simplifying $\log_4 \dfrac{4}{64}$?**

**Step 1:** $\log_4 \dfrac{4}{64} = \log_4 4 - \log_4 64$

**Step 2:** $= 1 - 1$

**Step 3:** $= -15$

**A** Step 1

**B** Step 2

**C** Step 3

**D** Each step is correct.

CST00517

**48** **Jeremy, Michael, Shanan, and Brenda each worked the same math problem at the chalkboard. Each student's work is shown below. Their teacher said that while two of them had the correct answer, only one of them had arrived at the correct conclusion using correct steps.**

**Jeremy's work**

$$x^3x^{-7} = \frac{x^3}{x^{-7}} = x^{10}, x \neq 0$$

**Shanan's work**

$$x^3x^{-7} = \frac{x^3}{x^7} = \frac{1}{x^4}, x \neq 0$$

**Michael's work**

$$x^3x^{-7} = \frac{x^3}{x^{-7}} = x^{-4}, x \neq 0$$

**Brenda's work**

$$x^3x^{-7} = \frac{x^3}{x^7} = x^4, x \neq 0$$

**Which is a completely correct solution?**

**A** Jeremy's work

**B** Michael's work

**C** Shanan's work

**D** Brenda's work

CST10301

**49** **A student showed the following steps in his solution of the equation below, but his answer was not correct.**

$$\log_5(2x^2 - 3x + 1) - \log_5(x - 1) + \log_5 125 = 6$$

**Step 1:** $\log_5(2x - 1)(x - 1) - \log_5(x - 1) + 3 = 6$

**Step 2:** $\log_5(2x - 1)(x - 1) - \log_5(x - 1) = 3$

**Step 3:** $\log_5(x - 1) = 3$

**Step 4:** $x - 1 = 125$

**Step 5:** $x = 126$

**In which step did he make his first error?**

**A** Step 1

**B** Step 2

**C** Step 3

**D** Step 4

CST10336

**50** **A certain radioactive element decays over time according to the equation** $y = A\left(\frac{1}{2}\right)^{\frac{t}{300}}$, **where A = the number of grams present initially and *t* = time in years. If 1000 grams were present initially, how many grams will remain after 900 years?**

**A** 500 grams

**B** 250 grams

**C** 125 grams

**D** 62.5 grams

CST00367

**51** **Bacteria in a culture are growing exponentially with time, as shown in the table below.**

**Bacteria Growth**

| Day | Bacteria |
|---|---|
| 0 | 100 |
| 1 | 200 |
| 2 | 400 |

**Which of the following equations expresses the number of bacteria, $y$, present at any time, $t$?**

**A** $y = 100 + 2^t$

**B** $y = (100) \cdot (2)^t$

**C** $y = 2^t$

**D** $y = (200) \cdot (2)^t$

CST10253

**52** **If the equation $y = 2^x$ is graphed, which of the following values of $x$ would produce a point closest to the $x$-axis?**

**A** $\frac{1}{4}$

**B** $\frac{3}{4}$

**C** $\frac{5}{3}$

**D** $\frac{8}{3}$

CST20145

**53** **Which table below correctly describes points of the exponential function $f(x) = 3^{-x} - 2$?**

**A**

| $x$ | $-2$ | $-1$ | $0$ |
|---|---|---|---|
| $f(x)$ | $-18$ | $-6$ | $-2$ |

**B**

| $x$ | $-2$ | $-1$ | $0$ |
|---|---|---|---|
| $f(x)$ | $-4$ | $-5$ | $-2$ |

**C**

| $x$ | $-2$ | $-1$ | $0$ |
|---|---|---|---|
| $f(x)$ | $-1\frac{8}{9}$ | $-1\frac{2}{3}$ | $-1$ |

**D**

| $x$ | $-2$ | $-1$ | $0$ |
|---|---|---|---|
| $f(x)$ | $7$ | $1$ | $-1$ |

CST20196

**54** $\log_6 40 =$

**A** $\log_{10} 6 + \log_{10} 40$

**B** $\log_{10} 6 - \log_{10} 40$

**C** $(\log_{10} 6)(\log_{10} 40)$

**D** $\frac{\log_{10} 40}{\log_{10} 6}$

CST00199

**55** **Jonathan wrote the equation $\log_6(x-4)=0$ on the board. He needs one clue for problem solving. Which fact provides the correct information that he needs to solve the equation?**

**A** $6^0=1$

**B** $6^1=6$

**C** $4-4=0$

**D** $6-4=2$

CST10484

**56** **What is the value of $\log_3 27$?**

**A** 2

**B** 3

**C** 6

**D** 9

CST00519

**57** **If $\log 2 \approx 0.301$ and $\log 3 \approx 0.477$, what is the approximate value of log 72?**

**A** 0.051

**B** 0.778

**C** 0.861

**D** 1.857

CST10362

**58** **If $x$ is a real number, for what values of $x$ is the equation $\frac{3x-9}{3}=x-3$ true?**

**A** all values of $x$

**B** some values of $x$

**C** no values of $x$

**D** impossible to determine

CST00032

**59** **On a recent test, Jeremy wrote the equation $\frac{x^2-16}{x-4}=x+4$. Which of the following statements is correct about the equation he wrote?**

**A** The equation is always true.

**B** The equation is always true, except when $x=4$.

**C** The equation is never true.

**D** The equation is sometimes true when $x=4$.

CST10260

**60** **Given the equation $y=x^n$ where $x>0$ and $n<0$, which statement is valid for real values of $y$?**

**A** $y>0$

**B** $y=0$

**C** $y<0$

**D** $y\leq 0$

CST20140

**61** **If $x$ is a real number, which *best* describes the values of $x$ for which the inequality $\sqrt{x}>0$ is true?**

**A** all $x>0$

**B** all $x\geq 0$

**C** all values of $x$

**D** no values of $x$

CST00396

**62** **Which of the following conclusions is true about the statement below?**

$$x^2 = \sqrt{x}$$

**A** The statement is always true.

**B** The statement is true when $x$ is negative.

**C** The statement is true when $x = 0$.

**D** The statement is never true.

CST10162

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**63** **Abelardo wants to create several different 7-character screen names. He wants to use arrangements of the first 3 letters of his first name (abe), *followed by* arrangements of 4 digits in 1984, the year of his birth. How many different screen names can he create in this way?**

**A** 72

**B** 144

**C** 288

**D** 576

CST10401

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**64** **A train is made up of a locomotive, 7 different cars, and a caboose. If the locomotive must be first, and the caboose must be last, how many different ways can the train be ordered?**

**A** 5040

**B** 181,440

**C** 362,880

**D** 823,543

CST10391

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**65** **Teresa and Julia are among 10 students who have applied for a trip to Washington, D.C. Two students from the group will be selected at random for the trip. What is the probability that Teresa and Julia will be the 2 students selected?**

**A** $\frac{1}{45}$

**B** $\frac{2}{45}$

**C** $\frac{1}{5}$

**D** $\frac{2}{5}$

CST00071

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**66** $(3y-1)^4 =$

**A** $81y^4 - 108y^3 + 54y^2 - 12y + 1$

**B** $81y^4 + 108y^3 - 54y^2 - 12y + 1$

**C** $81y^4 - 54y^3 - 108y^2 - 12y + 1$

**D** $81y^4 + 54y^3 - 108y^2 - 12y + 1$

CST00308

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**67** **How many terms does the binomial expansion of $\left(x^2 + 2y^3\right)^{20}$ contain?**

**A** 20

**B** 21

**C** 40

**D** 60

CST10316

**68** **What are the first 4 terms in the expansion of $(1+2x)^6$?**

**A** $1+12x+30x^2+40x^3$

**B** $1+12x+24x^2+48x^3$

**C** $1+12x+30x^2+120x^3$

**D** $1+12x+60x^2+160x^3$

CST20022

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**69** **What is the sum of the infinite geometric series**

$$\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\frac{1}{16}+\ldots?$$

**A** 1

**B** 1.5

**C** 2

**D** 2.5

CST20167

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**70** **What is the *n*th term in the arithmetic series below?**

$$3+7+11+15+19\ldots$$

**A** $4n$

**B** $3+4n$

**C** $2n+1$

**D** $4n-1$

CST10178

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**71** **Which expression represents $f(g(x))$ if $f(x)=x^2-1$ and $g(x)=x+3$?**

**A** $x^3+3x^2-x-3$

**B** $x^2+6x+8$

**C** $x^2+x+2$

**D** $x^2+8$

CST20032

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**72** **Given that $f(x)=3x^2-4$ and $g(x)=2x-6$, what is $g(f(2))$?**

**A** $-2$

**B** 6

**C** 8

**D** 10

CST30049

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**73** **If $f(x)=x^2+2x+1$ and $g(x)=3(x+1)^2$, which is an equivalent form of $f(x)+g(x)$?**

**A** $x^2+4x+2$

**B** $4x^2+2x+4$

**C** $4x^2+8x+4$

**D** $10x^2+20x+10$

CST10204

**74** **A math teacher is randomly distributing 15 rulers with centimeter labels and 10 rulers without centimeter labels. What is the probability that the first ruler she hands out will have centimeter labels and the second ruler will *not* have labels?**

**A** $\frac{1}{24}$

**B** $\frac{1}{4}$

**C** $\frac{2}{5}$

**D** $\frac{23}{25}$

CST10435

**75** **On a certain day the chance of rain is 80% in San Francisco and 30% in Sydney. Assume that the chance of rain in the two cities is independent. What is the probability that it will *not* rain in either city?**

**A** 7%

**B** 14%

**C** 24%

**D** 50%

CST20180

**76** **One bag contains 2 green marbles and 4 white marbles, and a second bag contains 3 green marbles and 1 white marble. If Trent randomly draws one marble from each bag, what is the probability that they are both green?**

**A** $\frac{1}{4}$

**B** $\frac{2}{5}$

**C** $\frac{1}{2}$

**D** $\frac{5}{6}$

CST20181

**77** **A box contains 7 large red marbles, 5 large yellow marbles, 3 small red marbles, and 5 small yellow marbles. If a marble is drawn at random, what is the probability that it is yellow, given that it is one of the large marbles?**

**A** $\frac{5}{12}$

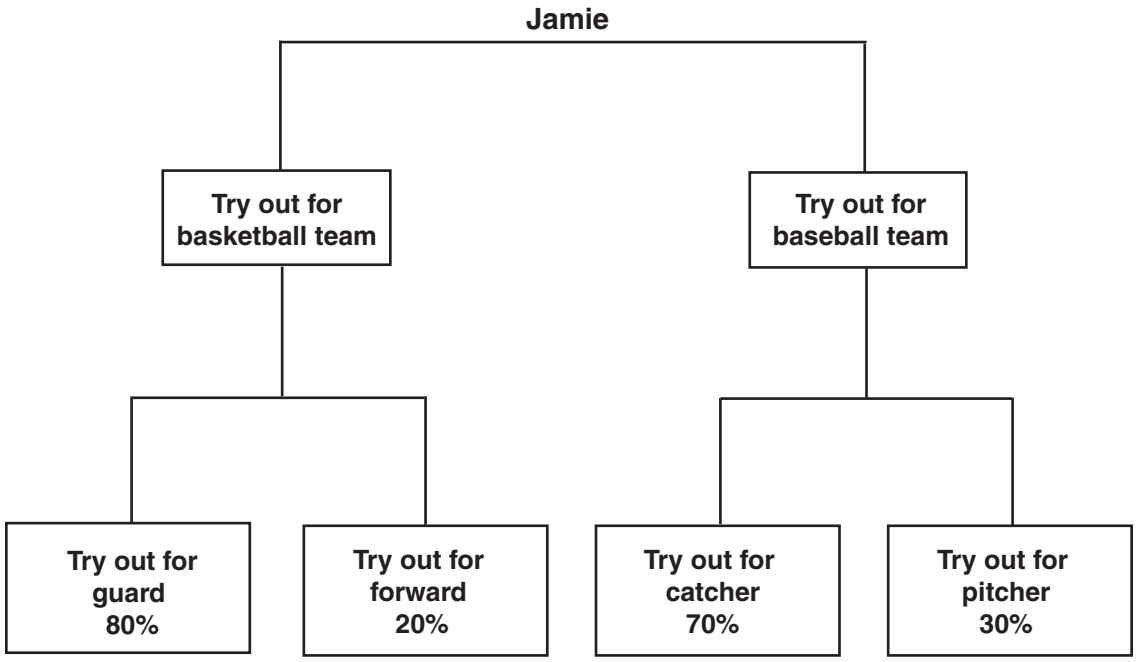
**B** $\frac{7}{20}$

**C** $\frac{5}{8}$

**D** $\frac{1}{5}$

CSN00211

**78** **The probabilities that Jamie will try out for various sports and team positions are shown in the chart below.**




**Jamie will definitely try out for either basketball or baseball, but not both. The probability that Jamie will try out for baseball and try out for catcher is 42%. What is the probability that Jamie will try out for basketball?**

**A** 40%

**B** 60%

**C** 80%

**D** 90%

CST10210

**79** **A small-business owner must hire seasonal workers as the need arises. The following list shows the number of employees hired monthly for a 5-month period.**

**4, 13, 5, 6, 9**

**If the mean of these data is approximately 7, what is the population standard deviation for these data? (Round the answer to the nearest tenth.)**

**A** 3.3

**B** 7.4

**C** 10.8

**D** 13.5

CST20052

**80**

**3, 6, 2, 1, 7, 5**

**James found the mean and standard deviation of the set of numbers given above. If he adds 5 to each number, which of the following will result?**

**A** The mean will be multiplied by 5.

**B** The standard deviation will increase by 5.

**C** The mean will not change.

**D** The standard deviation will not change.

CSN00127