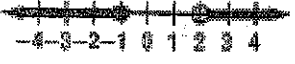



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|---|-----|---|------------------------|-------------------------|------------------------|-------------------------|
| A | 1. | The cost of setting the type for a pamphlet is \$15 and the cost of paper and printing is 25 cents per copy. Write a formula which will give in dollars the total cost (T) of printing n copies. | A. $T = 15 + 0.25n$ | B. $T = 25 + 15n$ | C. $T = 15 + 25n$ | D. $T = 40n$ |
| C | 2. | Translate "the product of x and y divided by three times their difference." | A. $\frac{3(x-y)}{xy}$ | B. $xy \div x - 3y$ | C. $\frac{xy}{3(x-y)}$ | D. $\frac{xy}{3x-y}$ |
| A | 3. | Solve $\frac{3}{4}x = \frac{15}{2}$ | A. 10 | B. 20 | C. 30 | D. 40 |
| C | 4. | Solve: $12x - 5x + 3 = 10$ | A. -1 | B. $\frac{7}{17}$ | C. 1 | D. $1\frac{6}{7}$ |
| C | 5. | Solve: $x - 3(4 - x) = -8$ | A. -5 | B. -2 | C. 1 | D. 10 |
| D | 6. | Solve: $-2(4x - 6) = 6 - 6x$ | A. -9 | B. -6 | C. $1\frac{2}{7}$ | D. 3 |
| A | 7. | Solve: $\frac{3}{4}y + 8 = -7 - \frac{1}{2}y$ | A. -12 | B. $-\frac{4}{5}$ | C. $\frac{4}{5}$ | D. 12 |
| B | 8. | Solve: $\frac{x}{2} + \frac{3}{2} = 1$ | A. -2 | B. -1 | C. 1 | D. 2 |
| A | 9. | A baseball pitcher's earned-run average (E) is given by the formula $E = 9\left(\frac{a}{b}\right)$, where a is the number of earned runs the pitcher has allowed and b is the number of innings pitched. Solve the formula for b. | A. $b = \frac{9a}{E}$ | B. $b = \frac{9E}{a}$ | C. $b = 9E - a$ | D. $b = a - 9E$ |
| A | 10. | Solve the formula $p = (k + 1)m$ for m. | A. $m = \frac{p}{k+1}$ | B. $m = \frac{k+1}{p}$ | C. $m = p + k + 1$ | D. $m = p - k - 1$ |
| D | 11. | Solve for f: $T = mg - mf$ | A. $f = \frac{Tg}{m}$ | B. $f = \frac{mg+T}{m}$ | C. $f = g - T$ | D. $f = \frac{mg-T}{m}$ |
| B | 12. | Solve the formula $P = w(l + 1)$ for l. | A. $l = \frac{P-1}{w}$ | B. $l = \frac{P-w}{w}$ | C. $l = P + w + 1$ | D. $l = P - w - 1$ |
| C | 13. | Solve: $4 - (3 + 2x) > -7$ | A. $x < 3$ | B. $x > 3$ | C. $x < 4$ | D. $x > 4$ |

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|---|-----|---|
| B | 14. | Solve: $7 - 2(4 - 4x) < 5 - (2 + 4x)$ A. $x > \frac{1}{3}$ B. $x < \frac{1}{3}$ C. $x < 1$ D. $x > 1$ |
| A | 15. | Solve: $-3x - 4 > -2(x - 1)$ A. $x < -6$ B. $x > -6$ C. $x < -2$ D. $x > -2$ |
| A | 16. | Solve: $-3x - 4 > -2(x - 1)$ A. $x < -6$ B. $x > -6$ C. $x < -2$ D. $x > -2$ |
| D | 17. | Solve: $4 - (5 - 2x) \leq 6x - 25$ A. $x \leq 3$ B. $x \geq 3$ C. $x \leq 6$ D. $x \geq 6$ |
| C | 18. | The charge to rent a car for a day is \$16. There is an additional charge of \$0.12 per mile. What is the greatest number of miles that a rented car can be driven in a day if the total bill is to be <u>less than \$40</u> ? A. 160 miles B. 190 miles C. 199 miles D. 240 miles |
| B | 19. | Ali has twice as many coins as Gil. If the total number of coins they have is <u>at least 40</u> , what is the smallest number of coins that Gil can have? A. 13 B. 14 C. 26 D. 27 |
| B | 20. | Solve $-4 < 2 + 3x \leq 14$ A. $-9 < x \leq 9$ B. $-2 < x \leq 4$ C. $-\frac{2}{3} < x \leq 4$ D. all real numbers |
| C | 21. | Solve: $-1 < x + 3 \leq 9$ A. $2 < x \leq 12$ B. $-1 < x \leq 6$ C. $-4 < x \leq 6$ D. $2 < x \leq 9$ |
| A | 22. | The tensile strength of a material can be determined by the formula $t = \frac{\text{breaking force}}{\text{thickness} \cdot \text{width}}$. What breaking force would yield a tensile strength between 45,000 and 51,000 pounds per square inch for a strip of material 0.02 inches thick and 0.05 inches wide? A. (45 < breaking force < 51) pounds B. (255 < breaking force < 315) pounds C. (450 < breaking force < 510) pounds D. (2,550 < breaking force < 3,150) pounds |
| B | 23. | Solve: $\frac{y-3}{4} = \frac{3}{4}$ A. 12 B. 6 C. 0 D. -6 |
| B | 24. | For what value of x will $\frac{x+2}{5} = \frac{x+1}{4}$ be true? A. 13 B. 9 C. 3 D. 2 |
| C | 25. | Solve: $\frac{15}{2x+1} = \frac{5}{3}$ A. 2 B. 3 C. 4 D. 8 |
| A | 26. | Solve: $\frac{x+1}{4} = \frac{5}{12}$ A. $\frac{2}{3}$ B. $\frac{3}{2}$ C. $\frac{19}{12}$ D. 4 |

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| A | 27. | The ratio of an object's weight on Earth to its weight on Mars is 5:2. How much would a man who weighs 165 pounds on Earth weigh on Mars? A. 66 pounds B. 166.5 pounds C. 400 pounds D. 412.5 pounds |
| D | 28. | The ratio of the sides of $\triangle ABC$ to the sides of a similar triangle, $\triangle XYZ$, is $\frac{5}{8}$. If the base of $\triangle ABC$ is 7m, what is the length of the base of $\triangle XYZ$? A. 4.4 m B. 5.7 m C. 9.3 m D. 11.2 m |
| C | 29. | Of the 20,000 votes cast in an election, 60% were for Franklin. How many were cast for the other candidates? A. 120 B. 800 C. 8,000 D. 12,000 |
| B | 30. | A local store has a 25% discount on all clothing. How much would you have to pay for a suit which ordinarily sells for \$220? A. \$55 B. \$165 C. \$195 D. \$245 |
| D | 31. | The following ordered pairs represent a function: (-2, 10), (-1, 7), (0, 6), (1, 7), and (2, 10). Which equation could represent the function? A. $y = -4x + 2$ B. $y = x^2 - 6$ C. $y = 5x$ D. $y = x^2 + 6$ |
| D | 32. | Which set of ordered pairs represents a nonlinear function? A. (0, 0), (1, 1), (2, 2), (3, 3), and (4, 4) B. (0, 0), (1, -1), (2, -2), and (4, -4) C. (0, -1), (1, 0), (2, 1), (3, 2), and (4, 3) D. (0, 0), (1, 1), (2, 8), (3, 27), and (4, 64) |
| C | 33. | Write a compound inequality for the graph.  A. $x < -1$ and $x \geq 2$ B. $x < -1$ or $x \geq 2$ C. $x \leq -1$ or $x > 2$ D. $x \leq -1$ and $x > 2$ |
| D | 34. | Which compound inequality has the solution set shown in the graph?  A. $-2 < y < 3$ B. $-2 < y \leq 3$ C. $y \geq -2$ or $y < 3$ D. $-2 \leq y < 3$ |
| 2 11 | 35. | Simplify: $0.\overline{36} \div 2$ |
| 19 22 | 36. | Simplify: $0.\overline{36} + \frac{1}{2}$ |
| 10 33 | 37. | Simplify: $0.\overline{36} \cdot \frac{5}{6}$ |
| 12.5 | 38. | When eight is added to three times the number x , the result is equal to seven times the difference of the number x and six. What is the value of x ? |

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| 1 mph | 39. | Alex walked 1 mile in 15 minutes. Sally walked 3,520 yards in 24 minutes. In miles per hour, how much faster did Sally walk than Alex? (Note: 1 mile = 1,760 yards) |
| 19 cm | 40. | The perimeter of a triangle is 51 centimeters. The lengths of its sides are consecutive odd integers. Find the lengths of the longest side of this triangle. |

DPMS/M
CLT
A9X

(14) $7 - 2(4 - 4x) < 5 - (2 + 4x)$

$7 - 8 + 8x < 5 - 2 - 4x$

$-1 + 8x < 3 - 4x$

$\quad + 4x \quad + 4x$

$-1 + 12x < 3$

$+1 \quad +1$

$12x < 4$

$\frac{12}{12} \quad \frac{4}{12}$

$x < \frac{1}{3}$

D₁₂

DPMS
A2X

(15) $-3x - 4 > -2(x - 1)$

$-3x - 4 > -2x + 2$

$\quad + 2x \quad + 2x$

$-1x - 4 > 2$

$\quad + 4 \quad + 4$

$-1x > 6$

$-1 \quad -1$

$x < -6$

A₄

D₁

DPMS
CLT
S6X

(17) $4 - (5 - 2x) \leq 6x - 25$

$4 - 5 + 2x \leq 6x - 25$

$-1 + 2x \leq 6x - 25$

$\quad - 6x \quad - 6x$

$-1 - 4x \leq -25$

$+1 \quad +1$

$-4x \leq -24$

$\quad -4 \quad -4$

$x \geq 6$

D-4

(18) Let m = miles

$-12m + 16 < 40$

$\quad -16 \quad -16 \quad S_{16}$

$-12m < 24$

$\quad \cdot 12 \quad \cdot 12 \quad D_{12}$

$m < 200$ (199 miles)

(19) Let c = # of coins

Ali has 2c

Gil has c

$2c + c \geq 40$

$3c \geq 40$ CLT

$\quad \cdot 3 \quad \cdot 3 \quad D_3$

$c \geq 13\frac{1}{3} \rightarrow$ (14 coins)

(20) $-4 < 2 + 3x \leq 14$

$-4 < 2 + 3x$ and $2 + 3x \leq 14$

$S_2 \quad -2 \quad -2$

$\quad -2 \quad -2 \quad S_2$

$-6 < 3x$

$3x \leq 12$

$D_3 \quad \frac{-6}{3} \quad \frac{3x}{3}$

$\quad \frac{3x}{3} \quad \frac{12}{3} \quad D_3$

$-2 < x$

$x > -2$ and $x \leq 4$

~~$-2 < x < 4$~~

~~$-2 < x < 4$~~

$-2 < x \leq 4$

(21) $-1 < x + 3 \leq 9$

$-1 < x + 3$ and $x + 3 \leq 9$

$S_3 \quad -3 \quad -3$

$\quad -3 \quad -3 \quad S_3$

$-4 < x$

$x > -4$ and $x \leq 6$

$-4 < x \leq 6$

22) $45,000 < \frac{\text{breaking force}}{\text{thickness}} < 51,000$

Let $b = \text{breaking force}$

$45,000 < \frac{b}{.001} < 51,000$

$45,000 < \frac{b}{.001} < 51,000$

$.001(45,000) < \left(\frac{b}{.001}\right) < .001(51,000)$

$45 < b$ and $b < 51$

$45 < b < 51$

23) ~~$\frac{y-3}{4} = \frac{3}{4}$~~

$4(y-3) = 12$

OPMS

$4y - 12 = 12$

A12

$+12 +12$

$4y = 24$

D4

$\frac{4y}{4} = \frac{24}{4}$

$y = 6$

24) ~~$\frac{x+2}{5} = \frac{x+1}{4}$~~

$4(x+2) = 5(x+1)$

OPMA

$4x + 8 = 5x + 5$

S4x

$-4x -4x$

$8 = x + 5$

S5

$-5 -5$

$x = 3$

25) ~~$\frac{15}{2x+1} = \frac{5}{3}$~~

$5(2x+1) = 45$

OPMA

$10x + 5 = 45$

S5

$-5 -5$

$10x = 40$

D10

$\frac{10x}{10} = \frac{40}{10}$

$x = 4$

26) ~~$\frac{x+1}{4} = \frac{5}{12}$~~

$12(x+1) = 20$

$12x + 12 = 20$ OPMA

$-12 -12$ S12

$12x = 8$

$\frac{12x}{12} = \frac{8}{12}$ D12

$x = \frac{2}{3}$

27) Earth: $\frac{5}{2} = \frac{165}{x}$

$5x = 330$

$\frac{5x}{5} = \frac{330}{5}$ D5

$x = 66$ lbs

28) $\frac{ABC}{XYZ} : \frac{5}{8} = \frac{7}{x}$

$5x = 56$

$\frac{5x}{5} = \frac{56}{5}$ D5

$x = 11.2$ m

29) 40% for other candidates

$.4(20,000) = 8000$ for other candidates

30) $.75(220) = \$165$

31) $x \quad y$

| | |
|----|----|
| -2 | 10 |
| -1 | 7 |
| 0 | 6 |
| 1 | 7 |
| 2 | 10 |

has an x^2
 $y = x^2 + 6$
 $7 = 1^2 + 6$
 $10 = (-2)^2 + 6$
 $7 = (-1)^2 + 6$
 $6 = 0^2 + 6$

32) $x \quad y$

| | |
|---|----|
| 0 | 0 |
| 1 | 1 |
| 2 | 8 |
| 3 | 27 |
| 4 | 64 |

Not linear

(33) mins → OR

(34) segment → AND
(between -2 and 3)
open circle on 3 &
closed circle on -2 &

(35) $\sqrt{36} \div 2$
 $\frac{36 \div 9}{99 \div 9} \cdot \frac{1}{2}$
 $\frac{24}{11} \cdot \frac{1}{2} = \left(\frac{2}{11}\right)$

(36) $\sqrt{36} + \frac{1}{2}$
 $\frac{36}{99} + \frac{1}{2}$
 $\frac{4 \cdot 2}{11 \cdot 2} + \frac{1 \cdot 11}{2 \cdot 11}$
 $\frac{8}{22} + \frac{11}{22} = \left(\frac{19}{22}\right)$

(37) $\sqrt{36} - \frac{5}{6}$
 $\frac{36}{99} - \frac{5}{6}$
 $\frac{4}{11} - \frac{5}{6} = \left(\frac{10}{33}\right)$

(38) $3x + 8 = 7(x - 6)$
DPMS
S_{3x}
A₄₂
D₄

$$\begin{array}{r} 3x + 8 = 7(x - 6) \\ 3x + 8 = 7x - 42 \\ -3x \quad -3x \\ \hline 8 = 4x - 42 \\ +42 \quad +42 \\ \hline 50 = 4x \\ \frac{50}{4} = \frac{4x}{4} \quad \boxed{x = 12.5} \end{array}$$

(39) Alex: 1 mile in 15 min
= 4 mph

Sally:
 $\frac{3520 \cancel{\text{yd}}}{24 \cancel{\text{min}}} \cdot \frac{1 \text{ mi}}{1760 \cancel{\text{yd}}} \cdot \frac{60 \cancel{\text{min}}}{1 \text{ hr}} = \frac{211200}{42240}$
= 5 mph
5 - 4 = 1 mph faster

(40) Let x = side 1
 $x + 2$ = side 2
 $x + 4$ = side 3
 $x + x + 2 + x + 4 = 51$
 $3x + 6 = 51$ CUT
 $-6 \quad -6$ S₆
 $\frac{3x}{3} = \frac{45}{3}$ D₃
 $x = 15$
longest $x + 4$
 $15 + 4 = 19 \text{ cm}$