

# Test 1 Study Guide Answer Key

1)  $-4y$

2)  $-3x + 9z - 7$

3 Commutative

4 Inverse

5 Distributive

6) (5.4)  $\frac{3.28 \text{ ft}}{1 \text{ meter}}$   
 $17.172 \text{ m}$   
17.17 m rounded

7)  $5 \text{ oz} \cdot \frac{28 \text{ grams}}{1 \text{ oz}} = 140 \text{ grams}$

$$\begin{array}{r} 6N - 8 = 22 \\ +8 \quad +8 \\ \hline 6N = 30 \\ \frac{6N}{6} = \frac{30}{6} \\ N = 5 \end{array}$$

$$\begin{array}{r} \textcircled{9} \quad -6x + 9 = 3x - 27 \\ +3x \quad +3x \\ \hline \end{array}$$

$$\begin{array}{r} -3x + 9 = -27 \\ -9 \quad -9 \end{array}$$

$$\begin{array}{r} -3x = -36 \\ -3 \quad -3 \end{array}$$

$$x = 12$$

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10)  $3(4x - 2) - 10 = 9x + 2$

$$12x - 6 - 10 = 9x + 2$$

$$12x - 16 = 9x + 2$$

$$\begin{array}{r} -9x \quad -9x \\ \hline \end{array}$$

$$\begin{array}{r} 3x - 16 = 2 \\ +16 \quad +16 \end{array}$$

$$\frac{3x}{3} = \frac{18}{3}$$

$$x = 6$$

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11)  $-\frac{3}{4}d = \frac{4}{9}$

$$\left(\frac{-4}{3}\right)\left(-\frac{3}{4}d\right) = \frac{4}{9}\left(\frac{-4}{3}\right)$$

$$\begin{array}{r} +12 \\ 12 \end{array} d = \frac{-16}{27}$$

$$d = \frac{-16}{27}$$

$$\textcircled{12} \quad \frac{x}{4} + 1 = \frac{1}{4}$$

$$\frac{4}{1} \left( \frac{x}{4} + 1 \right) = \left( \frac{1}{4} \right) \frac{4}{1}$$

$$x + 4 = 1$$

$$\begin{array}{r} -4 \\ x = -3 \end{array}$$

$$\textcircled{13} \quad \frac{1}{5} - \frac{x}{4} = \frac{7}{20}$$

$$\frac{20}{1} \left( \frac{1}{5} - \frac{x}{4} \right) = \frac{7}{20} \cdot \frac{20}{1}$$

$$4 - 5x = 7$$

$$\begin{array}{r} -4 \\ -5x = 3 \\ \frac{-5}{-5} \quad \frac{3}{-5} \\ x = -3/5 \end{array}$$

$$\textcircled{14} \quad 1.3x - 2.9 = 0.6x - 1.22$$

$$\begin{array}{r} -0.6x \quad -0.6x \\ 0.7x - 2.9 = -1.22 \\ +2.9 \quad +2.90 \\ \hline 0.7x = 1.68 \\ \frac{.7}{.7} \quad \frac{1.68}{.7} \\ x = 2.4 \end{array}$$

$$\textcircled{15}$$

$$\begin{array}{r} -0.7x + 1.15 = -0.4x + 3.85 \\ +0.4x \quad +0.4x \\ \hline -0.3x + 1.15 = 3.85 \\ -1.15 \quad -1.15 \\ \hline -0.3x = 2.70 \\ \frac{-0.3}{-0.3} \quad \frac{2.70}{-0.3} \\ x = 9.0 \end{array}$$

$$\textcircled{16} \quad x \geq -7$$

$$\textcircled{17} \quad 18N + 6 \leq 3(5N - 3)$$

$$18N + 6 \leq 15N - 9$$

$$\begin{array}{r} -15N \quad -15N \\ \hline 3N + 6 \leq -9 \\ -6 \quad -6 \\ \hline 3N \leq -15 \\ \frac{3}{3} \quad \frac{-15}{3} \\ N \leq -5 \end{array}$$

$$(-\infty, -5]$$

$$(18) \quad 4 + 5y - 1 \geq 4y + 1$$

$$5y + 3 \geq 4y + 1$$

$$\begin{array}{r} -4y \\ \hline y + 3 \geq 1 \end{array}$$

$$\begin{array}{r} y + 3 \geq 1 \\ -3 \quad -3 \\ \hline y \geq -2 \end{array}$$

$$y \geq -2$$

$$[-2, \infty)$$

$$(19) \quad V = \frac{1}{3} Bh$$

$$3(V) = 3\left(\frac{1}{3} Bh\right)$$

$$\frac{3V}{3} = \frac{Bh}{3}$$

$$\frac{3V}{3} = h$$

$$(20) \quad \boxed{5N = 6N - 6}$$

$$\begin{array}{r} -6N \quad -6N \\ \hline -N = -6 \end{array}$$

$$\begin{array}{r} -N = -6 \\ -1 \quad -1 \\ \hline N = 6 \end{array}$$

$$N = 6$$

$$(21) \quad 9(9 - N) = -90$$

$$81 - 9N = -90$$

$$\begin{array}{r} -81 \quad -81 \\ \hline -9N = -171 \end{array}$$

$$\begin{array}{r} -9N = -171 \\ -9 \quad -9 \\ \hline N = 19 \end{array}$$

$$N = 19$$

$$(22) \quad 3N + (-9) = 12N$$

$$\begin{array}{r} -3N \quad -3N \\ \hline -9 = 9N \end{array}$$

$$\frac{-9}{9} = \frac{9N}{9}$$

$$-1 = N$$

$$(23) \quad 2N + (N - 14) = -30 - N$$

$$\begin{array}{r} 3N - 14 = -30 - N \\ +N \quad +N \\ \hline 4N - 14 = -30 \end{array}$$

$$4N - 14 = -30$$

$$\begin{array}{r} +14 \quad +14 \\ \hline 4N = -16 \end{array}$$

$$\frac{4N}{4} = \frac{-16}{4}$$

$$N = -4$$

$$(24) \quad x + (x + 1) + (x + 2) = 570$$

$$\begin{array}{r} 3x + 3 = 570 \\ -3 \quad -3 \\ \hline 3x = 567 \end{array}$$

$$\frac{3x}{3} = \frac{567}{3}$$

$$x = 189$$

$$(25) \quad x, x + 2, x + 4$$

$$x + (x + 4) = 5(x + 2) - 45$$

$$2x + 4 = 5x + 10 - 45$$

$$\begin{array}{r} 2x + 4 = 5x - 35 \\ -2x \quad -2x \\ \hline 4 = 3x - 35 \end{array}$$

$$\begin{array}{r} 4 = 3x - 35 \\ +35 \quad +35 \\ \hline 39 = 3x \end{array}$$

$$39 = 3x \quad x = 13$$

13

15

17

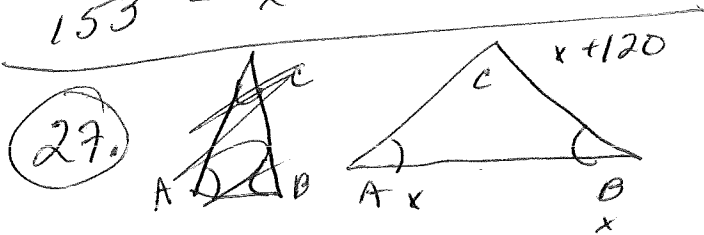
(26) Boys =  $x$   
Girls =  $x + 133$

$$439 = x + x + 133$$

$$\begin{array}{r} 439 = 2x + 133 \\ -133 \quad -133 \\ \hline \end{array}$$

$$\frac{306}{2} = \frac{2x}{2}$$

$$153 = x$$



$$A + B + C = 180$$

$$A + B = x$$

$$\begin{array}{r} x + x + x + 120 = 180 \\ -120 \quad -120 \\ \hline \end{array}$$

$$\begin{array}{r} \cancel{3x} \quad \cancel{240} \\ \hline 3 \quad 3 \\ \hline x = 80 \end{array}$$

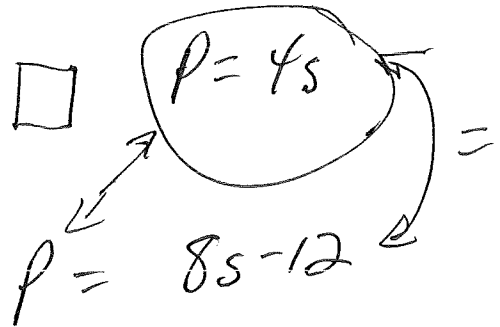
~~$$80 + 80 + 120$$~~

$$\frac{2x}{2} = \frac{60}{2}$$

$$x = 30$$

$$30 + 30 + 120 = 180$$

28.



$$4s = 8s - 12$$

$$\begin{array}{r} -4s \quad -4s \\ \hline \end{array}$$

$$\frac{-4s}{-4} = \frac{-12}{-4}$$

$$s = 3$$

$$4s = 12 \quad \begin{array}{r} 8(3) - 12 \\ 24 - 12 \\ 12 \end{array}$$

(29)  $P = 2L + 2W$

$$196 = 2(w + 24) + 2w$$

$$196 = 2w + 48 + 2w$$

$$196 = 4w + 48$$

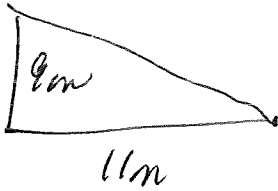
$$\begin{array}{r} -48 \quad -48 \\ \hline \end{array}$$

$$\frac{148}{4} = \frac{4w}{4}$$

$$37 = w \quad h = 61 \quad 196$$

$$\begin{array}{r} h = w + 24 \\ 37 + 24 = \\ 61 \end{array}$$

30



$$A = \frac{1}{2} B \cdot H$$

$$A = \frac{1}{2} \cdot 9 \cdot 11$$

$$A = \frac{1}{2} \cdot 99$$

$$A = 49\frac{1}{2} \text{ m}^2$$

32

~~$$x\% (270 + 180)$$~~

$$x\% (180) = (270 - 180)$$

$$180x = 90$$

$$x = \frac{90}{180}$$

$$x = \frac{1}{2}$$

$$x = 50\%$$

$$31 \quad P = 2300 \text{ ft}$$

$$P = A + B + C$$

$$P = 5 + 300 + 5 + 500 + S$$

$$P = 3S + 800$$

$$2300 = 3S + 800$$

$$\begin{array}{r} - 800 \\ \hline 1500 = \frac{3S}{3} \end{array}$$

$$500 \text{ ft} = S$$

33

$$P = \frac{230000 - 215,000}{230,000} \cdot 100\%$$

$$P = \frac{15,000}{230,000} \cdot 100\%$$

$$P = \frac{15}{230} \cdot 100\%$$

$$P = .0652 \cdot 100\%$$

$$P = 6.52\%$$

$$\approx 6.5\%$$

$$(34) \quad \$D = 195(.3)$$

$$\$D = \$58.50$$

$$SP = 195 - 58.50$$

$$\text{Sale Price} = 136.50$$

$$\textcircled{35} \quad \$315 (.15) = D$$

$$47.70 = \text{Discount}$$

39

$$S.P = 318.00 - 47.70$$

$$\text{Sale Price} = \$270.30$$

$$499.85 = (100 - 35\%) X$$

$$499.85 = .65 X$$

$$\$769 = X$$

$$\textcircled{36} \quad \frac{X (.65)}{.65} = \frac{302.25}{.65}$$

$$X = \$465$$

$$I = P \cdot R \cdot T$$

$\textcircled{40}$

$$\$30 = 900 R (3)$$

$$\frac{30}{2700} = \frac{2700 R}{2700}$$

$$\frac{30}{2700} = R$$

$$\frac{3}{270} = R$$

$$\frac{1}{90} = R$$

$$.11\bar{1} = R$$

$$11.1\% = R$$

37 ~~100~~

$$\$187 = (100 - 15) X$$

$$\frac{187}{.85} = \frac{.85 X}{.85}$$

$$220 = X$$

38

$$1259 (8.3) = T_x$$

$$104.497 = T_x$$

$$105.50 \text{ Tax}$$

$$\begin{array}{r} 1259 \\ \hline 1363.50 \end{array} \quad \begin{array}{l} \text{Total} \\ \text{Price} \end{array}$$