Quarter Qu 2 Study Guide key

(1) $T = 15 + .25n$ (A)

(2) $\frac{xy}{3(x-y)}$ (C)

(3) $\frac{4}{3}\left(\frac{3}{4}x\right) = \frac{5}{1}\left(\frac{10}{2}\right)\frac{2}{1}$

$x = 10$ (A)

(4) $12x - 5x + 3 = 10$

$7x + 3 = 10$

$-3 \quad -3$

$7x = 7$

(D) $x = 1$

(5) $x - 3(4 - x) = -8$

$x - 12 + 3x = -8$

$-12 + 4x = -8$

$4x = 4$

(C) $x = 1$

(6) $-2(4x - 6) = 6 - 6x$

$-8x + 12 = 6 - 6x$

$\frac{-2x}{-2} = \frac{-6}{-2}$

$x = 3$ (D)

(7) $4\left(\frac{3}{4}y + 8 = -7 - \frac{1}{2}y\right)$

$3y + 32 = -28 - 2y$

$5y = -60$

(A) $y = -12$

(8) $\left(\frac{x}{2} + \frac{3}{2} = 1\right)2$

$x + 3 = 2$

$x = -1$ (B)

(9) $\frac{E}{q} = \frac{q\left(\frac{a}{b}\right)}{q}$ (b)

$b\left(\frac{E}{q}\right) = \left(\frac{a}{b}\right)b$

$\frac{q}{E}\left(\frac{Eb}{q}\right) = (a)\frac{q}{E}$

$b = \frac{qa}{E}$ (A)

(10) $\frac{p}{k+1} = \frac{(k+1)m}{k+1}$ (m)

$\frac{p}{k+1} = m$ (A)

(11) $T = mg - mf$ (f)

$-mg \quad -mg$

$\frac{T - mg}{-m} = \frac{-mf}{-m}$

$\frac{-T + mg}{m} = f$ (D)

(12) $\frac{p}{w} = \frac{w(l+1)}{w}$ (l)

$\frac{p}{w} = l + 1$

$-1 \quad -1$

$\frac{p}{w} - 1 = l$ (B)

(13) $4-(3+2x)>-7$

$4-3-2x>-7$

$1-2x>-7$

$\frac{-2x}{-2} > \frac{-8}{-2}$

(C) $x<4$

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

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

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

$\frac{12x}{12} < \frac{4}{12}$

(B) $x<\frac{1}{3}$

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

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

same $\frac{-x}{-1} > \frac{6}{-1}$

(A) $x<-6$

(16) $-3x-4>-2(x-1)$

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

$\frac{-x}{-1} > \frac{6}{-1}$

(A) $x<-6$

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

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

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

$\frac{-4x}{-4} \leq \frac{-24}{-4}$

(D) $x\geq 6$

(18) $16+.12m\leq 40$

$-16 \quad -16$

$\frac{.12m}{.12} \leq \frac{24}{.12}$

$m\leq 200$

(C) 199 miles

(19) n=Mi g=Gil $a=2g$

$2g+g\geq 40$

$3g\geq 40$

(B) $g\geq 13.3$

14 coins

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

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

$\frac{-6}{3} < \frac{3x}{3} \leq \frac{12}{3}$

(B) $-2<x\leq 4$

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

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

$-4<x\leq 6$ (C)

(22) $t=\frac{\text{breaking force}}{\text{thickness}\cdot\text{width}}$

$45{,}000\leq t\leq 51{,}000$

$45{,}000\leq \frac{b}{.02(.05)} \qquad \frac{b}{.02(.05)}\leq 51{,}000$

$.001(45000)\leq \left(\frac{b}{.001}\right)\cdot .001 \qquad .001\left(\frac{b}{.001}\right)\leq (51000)\cdot .001$

$45\leq b \qquad b\leq 51$

$45\leq b\leq 51$ (A)

(23) $\frac{y-3}{4} \times \frac{3}{4}$

$12 = 4(y-3)$

$12 = 4y - 12$

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

$6 = y$ (B)

(24) $\frac{x+2}{5} \times \frac{x+1}{4}$

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

$5x+5 = 4x+8$

$x = 3$ (C)

(25) $\frac{15}{2x+1} \times \frac{5}{3}$

$45 = 5(2x+1)$

$45 = 10x+5$

$40 = 10x$

$4 = x$ (C)

(26) $\frac{x+1}{4} \times \frac{5}{12}$

$20 = 12(x+1)$

$20 = 12x+12$

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

$\frac{2}{3} = x$ (A)

(27) $\frac{E}{M}$ $\frac{5}{2} = \frac{165}{x}$

$5x = 330$

$x = 66$ lb (A)

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

$5x = 56$

$x = 11.2$ m (D)

(29) $\frac{\text{other}}{\text{total}}$ $\frac{x}{2000} = \frac{40}{100}$

(30) $220(.25) = 55$

$220 - 55$

\$165 (B)

(31)

x	y	
-2	10	> -3
-1	7	> -1
0	6	$> +1$
1	7	$> +3$
2	10	

+1

* Non linear

$(-2)^2 - 6 = -2$ ✗

$(-2)^2 + 6 = 10$ ✓

$(-1)^2 + 6 = 7$ ✓

(D) $y = x^2 + 6$

(32) A → linear $y = x$

B → linear $y = -x$

C → linear $y = x - 1$

D → nonlinear; no rate of change (D)

(33) * or $x \leq -1$ or $x > 2$ (C)

(34) *and $-2 \leq y < 3$ (D)

(35) $.\overline{36} \div 2$

$\frac{36}{99} = \frac{4}{11} \cdot \frac{1}{2} = \boxed{\frac{4}{22}}$

(36) $.\overline{36} + \frac{1}{2}$

$\frac{36}{99} = \frac{2}{2}\left(\frac{4}{11}\right) + \left(\frac{1}{2}\right)\frac{11}{11}$

$\frac{8}{22} + \frac{11}{22} = \boxed{\frac{19}{22}}$

(37) $.\overline{36} \cdot \frac{5}{6}$

$\frac{36}{99} = \frac{36}{11} \cdot \frac{5}{6_3} = \boxed{\frac{10}{33}}$

(38) X = the #

$8 + 3x = 7(x-6)$

$8 + 3x = 7x - 42$

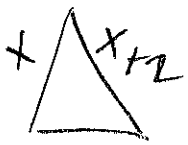
$50 = 4x$

$\frac{25}{2}$ or $12.5 = x$

(39) $\frac{1 \text{ mi}}{15 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = \frac{60}{15} =$ Alex = 4 mph

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

Sally is faster by 1 mph.

(40) 

X = 1st #

$X+2$ = 2nd #

$X+4$ = 3rd #

$X + X+2 + X+4 = 51$

$3X + 6 = 51$

$3X = 45$

$X = 15$

$15+4 = 19$

The longest side is 19 cm.