

SHSAT #6

D #1  $\frac{9.60}{48} = \frac{4.80}{24} = \frac{2.40}{12} = \frac{1.20}{6} = \$0.20$   
each pencil

Classwork

E #2  $\frac{\$9}{5} = \frac{\$18}{10} = \frac{\$1.80}{1} = \$1.80$  each T-shirt

B #3  $\frac{\$4.80}{12} = \frac{\$2.40}{6} = \frac{1.20}{3} = \$0.40$  per ounce water

C #4  $\frac{\$9.90}{50} = \frac{\$19.80}{100} = \frac{1.98}{10} = 0.198 \approx \$0.20$  per copy

B #5  $\frac{\$36}{30.26} = \frac{\$12}{10} = \$1.20$  per lb Dog Food.

C #6  $\frac{\$15}{100} = \frac{1.50}{10} = \$0.15$  per sq foot.

SHSAT #6  
Classwork

**C** #7  $a=5$   $4(125) - 3(25) + 2(5) - 1$   
 $a^2 = 25$   
 $a^3 = 125$   
 Plug In  $\rightarrow$   $500 - 75 + 10 - 1 = 434$

**D** #8

Grey	White	Total
3	1	4 ratio total
60	20	80 total in lab

**E** #9  $X=3$   $\frac{5(4+3)}{2(3)} = \frac{5(7)}{6} = \frac{35}{6}$

**D** #10 <sup>SKIP</sup>  
 Monday + 7 days (Monday)  
 + 14 days (Monday)  
 + 70 days (Monday) TEN WEEKS  
 + 77 days (M)  
 + 78 Tuesday  
 + 79 WEDNESDAY  
 80 Thursday

**D** #11 Johnny - Billy = +50ft per Minute  
 $(200) - (150)$   
 $(50)(12) = 600 \text{ ft ahead.}$

**D** #12  $\frac{9.50}{10} = 95 \text{ cents each}$   $\frac{4.90}{7} = 70 \text{ cents each}$   
 $95 - 70 = 25 \text{¢ More.}$

[E] #13  $\frac{\$5}{3} = \$1.\overline{66}$  per window...

SHSAT #6  
Classwork

[C] #14  $N = \sqrt{64-13} = \sqrt{51}$

$$\begin{array}{c} \swarrow \\ \sqrt{49} < \sqrt{51} < \sqrt{64} \\ \downarrow \qquad \qquad \downarrow \\ \boxed{7} < \sqrt{51} < \boxed{8} \end{array}$$

[B] #15  $\left(\frac{16\cancel{ft}}{\cancel{sec}}\right) \left(\frac{60\cancel{sec}}{1\cancel{min}}\right) \Rightarrow \left(\frac{60\cancel{ft}}{1\cancel{min}}\right) \left(\frac{1\cancel{yd}}{3\cancel{ft}}\right) = \frac{60}{3} = \boxed{20} \text{ yd/min}$

STEP ① (Seconds to min)      STEP ② (foot to yard)

[E] #16

$$\begin{array}{c} \xrightarrow[2\text{ hrs}]{170\text{ mi}} \xrightarrow[4\text{ hrs (50 mph)}]{200\text{ mi}} = \frac{370\text{ miles total}}{6\text{ hours time}} \\ \frac{370}{6} = \frac{110}{2} = \boxed{55} \text{ miles per hour.} \end{array}$$

[D] #17  $\frac{1}{10} + 2\frac{11}{100} + 3\frac{111}{1000} = 1.\underline{100} + 2.\underline{110} + 3.\underline{111} = \boxed{6.321}$

[C] #18

$$\begin{array}{l} \swarrow 30 \text{ pair (Black)} = \$48 \text{ also.} \\ \swarrow 10 \text{ pair (Black)} = \$16 \\ \swarrow 1 \text{ pair} = \boxed{\$1.60} \end{array}$$

E #19

$$25 \text{ pair Black} = \$48$$

$$50 \text{ pair} = \$96$$

$$100 \text{ pair} = \$192$$

$$10 \text{ pair} = \$19.20$$

$$30 \text{ pair} = \$57.60$$

$$25 \text{ pair White} = \$57.60$$

$$50 \text{ pair} = \$115.20$$

$$100 \text{ pair} = \$230.40$$

$$1 \text{ pair} = \$2.30$$

B #20

$$\text{Primes: } \{2, 3, 5, 7, 11, 13, 17, 19\}$$

$$\text{Two digits} \rightarrow (11 + 13 + 17) = 41$$

D #21

$$\frac{2}{3} a = N \frac{3}{2} \quad \text{Times } \frac{3}{2}$$

$$a = \frac{3}{2} N \quad \text{Times } 2$$

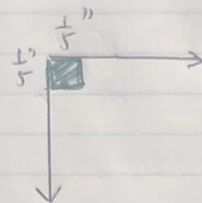
$$2a = 3N$$

SHSAT #6

Classwork

E

#22



$$1'' = 5 \text{ feet}$$

$$\frac{1}{5}'' = 1 \text{ foot}$$

$$\left(\frac{1}{5}\right)\left(\frac{1}{5}\right) = \left(\frac{1}{25}\right) = 1 \text{ foot square}$$

$$\frac{4}{100} = 1 \text{ ft}^2$$

$$0.04 = 1 \text{ ft}^2$$

E

#23

$$\frac{a}{b} = \frac{1}{3}$$

Cross multiply:

$$3a = b$$

$$\times A) \frac{3ab}{a+b} = \frac{3a(3a)}{a+3a} = \frac{9a^2}{4a} = \frac{9a}{4}$$

$$\times B) \frac{a+b}{3ab} = \frac{a+3a}{3a(3a)} = \frac{4a}{9a^2} = \frac{4}{9a}$$

$$\times C) \frac{a+b}{3a} = \frac{a+3a}{3a} = \frac{4a}{3a} = \frac{4}{3}$$

$$\times D) \frac{b}{3a} = \frac{3a}{3a} = 1$$

$$\checkmark E) \frac{b}{9a} = \frac{3a}{9a} = \frac{3}{9} = \frac{1}{3} \checkmark$$

E

#24

Number is divisible by 3 and 5. (multiple of 15)

eliminate A and C, end in 3. (not a mult of 5.)

$$B) 325 \quad 3+2+5 = 10 \text{ (not a mult of 3.)}$$

$$D) 425 \quad 4+2+5 = 11 \text{ (not a mult of 3.)} \quad E) 555 \checkmark$$

4

$$\textcircled{\#25} \quad 15 - 12 + (27 - 17) \div 10$$

$$15 - 12 + \underbrace{(10)} \div 10 = 3 + 1 = \boxed{4}$$

SHSAT #6

3

$$\textcircled{\#26} \quad \begin{array}{l} \textcircled{\#1} \quad 70 \text{ Cars} : 8 \text{ buses} \quad (\text{Times } 3) \\ \textcircled{\#2} \quad \downarrow \quad \quad \quad 3 \text{ buses} : 5 \text{ trucks} \quad (\text{Times } 8) \end{array}$$

$$\boxed{\text{C:B:T}} \quad 120 \text{ Cars} : 24 \text{ buses} : 40 \text{ trucks}$$

$$120 : 40$$

$$60 : 20$$

$$30 : 10$$

$$\text{Cars} \quad \boxed{3:1} \quad \text{trucks}$$

3

\textcircled{\#27}

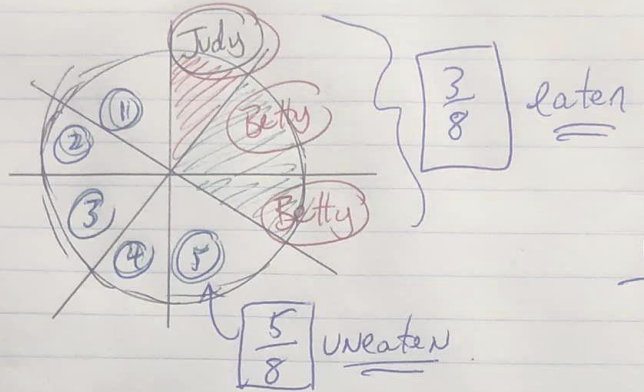
$$\begin{array}{c} \boxed{120} \\ \wedge \\ 12 \quad 10 \\ \wedge \quad \wedge \\ 6 \quad 2 \quad 2 \quad 5 \\ \wedge \quad \wedge \\ 3 \quad 2 \end{array}$$

$$\boxed{120} = \underbrace{(2)(2)(2)}(3)(5)$$

$\boxed{2^3}$  is the largest divisor.

$$\boxed{\frac{3}{5}}$$

#28



$$\frac{\left(\frac{3}{8}\right)}{\left(\frac{5}{8}\right)} = \boxed{\frac{3}{5}}$$

$$\boxed{160}$$

#29

$$1 \text{ gallon} = 8 \text{ pints} (\times 2) = 16 \text{ cups (2 cups per pint)}$$

$$10 \text{ gallons} = (16)(10) = \boxed{160 \text{ cups}}$$

$$\boxed{97.88}$$

#30

$$4.5 \text{ (hrs)} \times 3 = 13.5 \text{ hours total.}$$

$$13.5 \times \$7.25 = 97.875$$