

Name: \_\_\_\_\_

Date: \_\_\_\_\_

7AC- Final Exam Review

1. A snowboard is on sale for \$140. If this price represents a 30% discount from the original price, what was the original price of the skateboard?

$$\frac{70x}{70} = \frac{14000}{70} \quad \frac{140}{x} = \frac{70}{100}$$
$$x = 200$$

2. A deli has six types of meat, three types of cheese, and two types of bread. How many different sandwiches, consisting of one type of meat, one type of cheese, and one type of bread, does the deli serve?

$$6 \cdot 3 \cdot 2 = 36$$

3. Jen invests \$525 into a savings account that earns interest 2.8% simple interest. She plans on leaving the money in the account for 6 years. What will the final balance of the savings account be after 6 years?

$$I = prt$$
$$I = 525(0.028)(6) \quad I = 88.20$$
$$TB = 525 + 88.20$$

$$T.B. = \$613.20$$

4. Which measure of central tendency would most accurately display the following test scores? 85, 90, 20, 88, 92

a. Mean

b. Mode

c. Median

d. Range

5. Solve for x:  $3x + 2x - 5 = 105$

$$5x - 5 = 105$$
$$\frac{5x - 5}{+5 \quad +5} = \frac{105}{+5 \quad +5}$$
$$\frac{5x}{5} = \frac{110}{5}$$

$$x = 22$$

6. If the area of a circle is expressed as  $25\pi \text{ ft}^2$ , what is the radius?

$$A = \pi r^2$$
$$\frac{25\pi}{\pi} = \frac{\pi r^2}{\pi} \quad \sqrt{25} = \sqrt{r^2}$$
$$5r = r$$

7. A stereo that normally sells for \$90 is on sale for \$58.

What is the percent of discount for the sale price?

$$\frac{90}{-58}$$
$$32$$

$$\frac{32}{90} = \frac{x}{100}$$

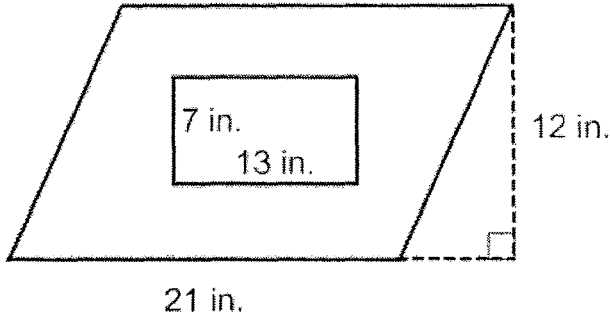
$$\frac{90x}{90} = \frac{3200}{90} \quad x = 35.5\%$$

8. What is the GCF of  $49x^2y$  and  $7x^3$ ?

$$GCF = 7x^2$$

$$\begin{array}{r} 7 \overline{) 49x^2y, 7x^3} \\ \underline{7x^2y, x^3} \\ 7y, x \end{array}$$

9. Find the area of the shaded region.



$$A = bh \quad A = bh$$

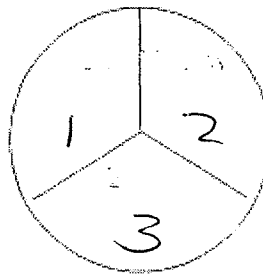
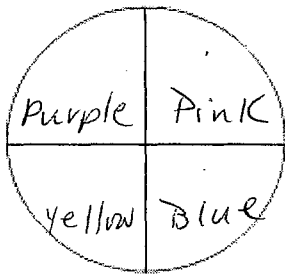
$$A = 7(13) \quad A = 21(12)$$

$$A = 91 \quad A = 252$$

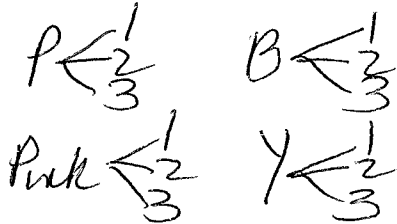
$$A = 252 - 91$$

$$A = 161 \text{ in}^2$$

10.



(a) Draw a tree diagram to find the total number of outcomes if each spinner is spun once.



(b) How many possible outcomes there are if each spinner is spun once?  $4 \cdot 3 = 12$

(c) Find  $P(\text{odd number, Purple})$   $\frac{2}{3} \cdot \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$

11. Chris bought 5 books at \$8 each. He had a coupon for 10% off. The sales tax was 6%. Find the total cost of the 5 books after the discount and sales tax are applied.

$$\text{Price} - 8(5) = \$40$$

$$\text{Discount} - 40(0.1) = 4$$

$$\text{Sales price} - 40 - 4 = 36$$

$$\text{Tax} - 36(0.06) = 2.16$$

$$\text{Total} - 36 + 2.16 = 38.16$$

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7AC FINAL EXAM REVIEW PART 2 (ws#3)

1) List the total possible outcomes of rolling a die and flipping a coin.

6 · 2

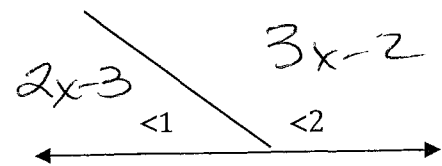
a) How many outcomes are there? 12

b) P(even number, heads)  $\frac{3}{12} = \frac{1}{4}$

- H1 T1
- ~~H2~~ T2
- H3 T3
- ~~H4~~ T4
- H5 T5
- ~~H6~~ T6

2) Using the diagram below, find the following:

If  $\angle 1$  is  $2x - 3$  and  $\angle 2$  is  $3x - 2$



a)  $x =$  37

b)  $\angle 1 =$   $71^\circ$

c)  $\angle 2 =$   $109^\circ$

$$\begin{array}{r} 3x-2 \\ 3(37)-2 \\ 111-2 \\ 109^\circ \end{array}$$

$$\begin{array}{r} 2x-3 \\ 2(37)-3 \\ 74-3 \\ 71^\circ \end{array}$$

$$\begin{aligned} 2x-3 + 3x-2 &= 180 \\ 5x-5 &= 180 \\ +5 & \quad +5 \\ \hline 5x &= 185 \\ \frac{5x}{5} &= \frac{185}{5} \\ x &= 37 \end{aligned}$$

3) An online retailer charges \$6.99 plus \$0.55 per pound to ship electronics purchases. Write and solve an equation to determine how pounds the DVD player weighs if your bill was \$9.74.

$$\begin{array}{r} 6.99 + .55x = 9.74 \\ -6.99 \quad \quad 6.99 \\ \hline .55x = 2.75 \\ \frac{.55x}{.55} = \frac{2.75}{.55} \\ x = 5 \text{ pounds} \end{array}$$

4) A rectangle has a length of  $(2x + 3)$  and a width of  $(x + 1)$ .

a) Express the perimeter in simplest form.  $6x + 8$

b) Factor your answer.  $2(3x + 4)$

$$\begin{aligned} P &= 2(2x+3+x+1) \\ P &= 2(3x+4) \\ P &= 6x+8 \\ 2 \overline{)6x+8} \\ & \quad 3x+4 \end{aligned}$$

- 5) The tables below shows the number of hours students of two classes studied for their math final.

2 <sup>nd</sup> Period Class					
7	5	12	19	4	10

- a) Find the median for each set of data.

$$4, 5, \underline{7}, 10, 12, 19$$

8.5

$$4, 9, \underline{11}, 12, 12$$

6 <sup>th</sup> Period Class				
12	11	4	9	12

- b) Write a sentence comparing the amounts of hours each class studied.

The period 6 class spent more time studying - about  $2\frac{1}{2}$  hours more.

- 6) A survey was conducted and 4 out of 5 prefer a Colgate toothpaste

- a) What is the experimental probability that the next person surveyed will prefer Colgate toothpaste?

$$\frac{4}{5}$$

- b) If 80 people were surveyed, how many people should you expect to prefer Colgate toothpaste?

$$\frac{4}{5} = \frac{x}{80}$$

$$\frac{5x}{5} = \frac{320}{5}$$

$$x = 64 \text{ people}$$

- 7) You bought 3 shirts at \$12.00 each. You had a 20% coupon and the sales tax was 8%. Calculate the total cost.

$$\begin{aligned} \text{Orig price} &- 3(12) = 36 \\ \text{discount} &- 36(.2) = 7.20 \\ \text{sales price} &- 36 - 7.20 = 28.80 \\ \text{tax} &- 28.80(.08) = 2.30 \\ \text{Total cost} &- 28.80 + 2.30 = \$31.10 \end{aligned}$$

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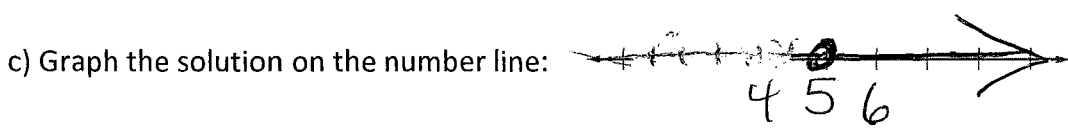
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8) Sue plays soccer. The team needs to score at least 7 goals to win the game. The team already has 2 goals. Write, solve and graph the inequality representing how many goals Sue needs to score in order for the team to win.

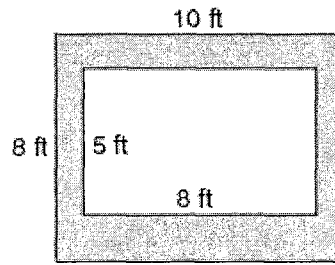
a) Write an inequality:  $x + 2 \geq 7$

b) Solve the inequality:

$$\begin{array}{r} x + 2 \geq 7 \\ -2 \quad -2 \\ \hline x \geq 5 \end{array}$$

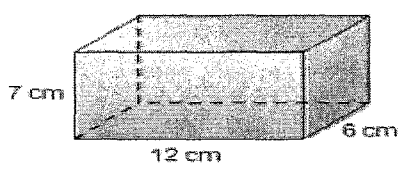


9) Calculate the area of the shaded region.



$$\begin{array}{l} A = lw \quad | \quad A = lw \\ A = 10(8) \quad | \quad A = 5(8) \\ A = 80 \quad | \quad A = 40 \\ \hline A = 80 - 40 \\ A = 40 \text{ ft}^2 \end{array}$$

10) Chris is making a mini bird house. Calculate the amount of wood he will need to construct the bird house.



$$\begin{array}{l} \text{Top} - 12(6) - 72 \\ \text{Bottom} - 12(6) - 72 \\ \text{Left} - 6(7) - 42 \\ \text{right} - 6(7) - 42 \\ \text{front} - 7(12) - 84 \\ \text{back} - 7(12) - 84 \\ \hline SA = 396 \text{ cm}^2 \end{array}$$



NAME Key

7AC FINAL EXAM REVIEW PART 2 (ws#2)

1) The tables below shows the number of hours worked.

a) Find the median for each set of data.

A 3, 4, 5, 6, 8, 9, 10, 11  
 med - 7

30, 35, 40, 42, 46, 47, 52, 56  
 med - 44

Group A Work Hours			
3	8	11	5
9	6	10	4

Group B Work Hours			
47	35	46	56
40	42	52	30

b) Write a sentence comparing the amount of hours each group worked.

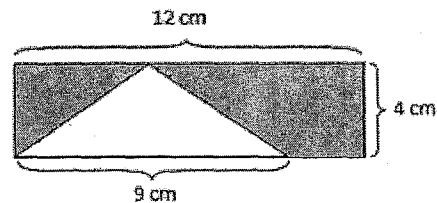
Group B worked many more hours than Group A.

2) Calculate the area of the shaded region.

$$A = lw \quad A = \frac{1}{2}bh$$

$$A = 12(4) \quad A = \frac{1}{2}(9)(4)$$

$$A = 48 \quad A = 18$$



$$AS = 48 - 18$$

$$AS = 30 \text{ cm}^2$$

3) List the total possible outcomes of a spinning a spinner with the letters A, B, and C and rolling a number cube.



$$3 \cdot 6 = 18 \text{ outcomes}$$

- 4) Verizon is offering a deal. There is an initial start up fee of \$24.00 and each month costs \$15.00. If you pay \$84.00, write and solve an equation to determine how many months of Verizon coverage you received.

$$\begin{array}{r} 24 + 15x = 84 \\ -24 \quad \quad -24 \\ \hline 15x = 60 \\ \frac{15x}{15} = \frac{60}{15} \\ x = 4 \text{ months} \end{array}$$

- 5) A survey was conducted and 7 out of 8 prefer Magic Kingdom over Epcot.

- a) What is the experimental probability that the next person surveyed will prefer the Magic Kingdom?

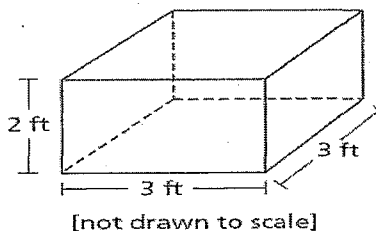
$$\frac{7}{8}$$

- b) If 80 people were surveyed, how many people should you expect to prefer the Magic Kingdom?

$$\begin{array}{r} \frac{7}{8} = \frac{x}{80} \\ 8x = 560 \\ \frac{8x}{8} = \frac{560}{8} \\ x = 70 \end{array}$$

- 6) Dennis needs some wood to build a box. He must calculate the surface area of the box to determine how much wood to buy. A diagram of the box is shown below. How much wood does Dennis need to build the box?

$$\begin{array}{l} T - 3(3) = 9 \\ B - 3(3) = 9 \\ L - 2(3) = 6 \\ R - 2(3) = 6 \\ F - 3(2) = 6 \\ B - 3(2) = 6 \\ \hline SA = 42 + 2 \end{array}$$



- 7) Find the total cost of a \$25 movie. You have a 10% coupon and have to pay 5% sales tax.

$$\begin{array}{l} 25(.1) = 2.50 \\ \text{Discount} - 25 - 2.50 = 22.50 \\ \text{Tax} - 22.50(.05) = 1.13 \\ \text{TC} - 22.50 + 1.13 = 23.63 \end{array}$$



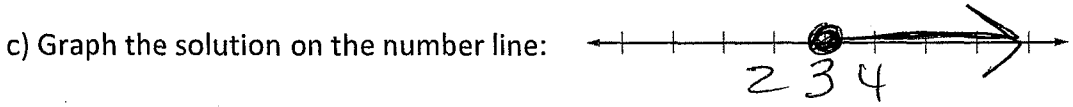
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8) Faith is making her famous brownies. She needs put in at least 12 cups of chocolate chips. She already put in 9 cups of chips. Write, solve and graph the inequality representing how many more chocolate chips she needs to use.

a) Write an inequality:  $9 + x \geq 12$

b) Solve the inequality: 
$$\begin{array}{r} 9 + x \geq 12 \\ -9 \quad -9 \\ \hline x \geq 3 \end{array}$$



9) A rectangle has a length of  $(3x + 3)$  and a width of  $(5x + 1)$ .

a) Express the perimeter in simplest form.  $16x + 8$

$$P = 2(3x + 3 + 5x + 1)$$

$$P = 2(8x + 4)$$

$$P = 16x + 8$$

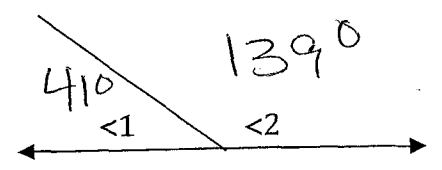
b) Factor your answer.  $8(2x + 1)$

$$8 \overline{) 16x + 8}$$

$$2x + 1$$

10) < Using the diagram below; find the following:

If  $\angle 1$  is  $2x + 3$  and  $\angle 2$  is  $8x - 13$



a)  $x = 19$

b)  $\angle 1 = 41$

c)  $\angle 2 = 139$

$$2x + 3 + 8x - 13 = 180$$

$$10x - 10 = 180$$

$$+10 \quad +10$$

$$\hline 10x = 190$$

$$\frac{10x}{10} = \frac{190}{10}$$

$$x = 19$$

$$\begin{array}{r} 2x + 3 \\ 2(19) + 3 \\ 38 + 3 \\ 41^\circ \end{array}$$

$$\begin{array}{r} 8x - 13 \\ 8(19) - 13 \\ 152 - 13 \\ 139^\circ \end{array}$$

