## **Probability of Union of Two Events** Total points = 46

3.

a. P(teenager or adult) = P(teenager) + P(adult) $\frac{1}{120} + \frac{36}{120}$ 24 36  $\frac{1}{2}$ 

 $\overline{2}$ b. P(adult or senior citizen) = P(adult) + P(senior)citizen) **√** 36 42  $\frac{36}{120} + \frac{42}{120}$  $=\frac{76}{120}$ 13

20 c. P(child or adult) =  $P(\text{child}) + P(\text{adult}) \checkmark$ =  $\frac{18}{120} + \frac{36}{120} \checkmark$ =  $\frac{54}{120} \checkmark$ = <u>120</u> ✓ 9 20

a. P(perfect square or perfect cube) = P(perfect square) +90 + 7 90

P(perfect cube) - P(perfect square and perfect cube)  $\checkmark$   $= \frac{6}{90} + \frac{2}{90} - \frac{1}{90} \checkmark$ b. P(divisible by 5 or 10) = P(divisible by 5) +

P(divisible by 10) -P(divisible by 5 and 10) <

c. P(multiple of 5 or multiple of 7) = P(multiple of 5) +P(multiple of 7) -P(multiple of 5 and 7) 

18 13 2  $= \frac{18}{90} + \frac{13}{90} - \frac{2}{90}$ 90

a. P(double or sum less than 5) = P(double) + P(sum less)than 5) - P(double and sum less than 5)  $\checkmark$  $= \frac{6}{36} + \frac{6}{36} - \frac{2}{36}$ **√** = $\frac{1}{36}$ 5 18

b. P(sum of 5 or sum greater than 4) = P(sum of 5) + P(sumgreater than 4) - P(sum of 5 and sum greater than 4)  $\frac{4}{36} + \frac{30}{36} - \frac{4}{36}$ 36 5

## c. P(sum less than 4 or greater than 9) $= P(\text{sum less than 4}) + P(\text{sum greater than 9}) \checkmark$ $= \frac{3}{36} + \frac{6}{36} \checkmark$ 36 4 4.

a. P(heart or black card)  $= P(\text{heart}) + P(\text{black card}) \checkmark$   $= \frac{13}{52} + \frac{26}{52} \checkmark$   $= \frac{39}{52} \checkmark$ = 52 3 4

b. P(club or queen)  $= P(\text{club}) + P(\text{queen}) - P(\text{club and queen}) \checkmark$   $= \frac{13}{52} + \frac{4}{52} - \frac{1}{52} \checkmark$   $= \frac{16}{52} \checkmark$ <u>16</u> <u>52</u> ✓ 4 13

c. P(diamond or red card)  $= P(diamond) + P(red card) - P(diamond and red card) \checkmark$  $= \frac{13}{52} + \frac{26}{52} - \frac{13}{52}$   $= \frac{26}{52} \checkmark$ 1

## Probability of Union of Two Events

Total points =  $\overline{46}$ 

1. a.  $P(teenager\ or\ adult)$ = P(teenager) + P(adult)24 36  $+\frac{30}{120}$  $\frac{\overline{120}}{60}$  $=\frac{\frac{1}{120}}{1}$ b. P(adult or senior citizen)

= P(adult) + P(senior)citizen) ✓  $\frac{36}{120} + \frac{42}{120}$  $=\frac{10}{120}$ 13 20

c. P(child or adult)  $= P(\text{child}) + P(\text{adult}) \checkmark$   $= \frac{18}{120} + \frac{36}{120} \checkmark$   $= \frac{54}{120} \checkmark$ <u>120</u> ✓ 9 20

a. P(perfect square or perfect cube) = P(perfect square) +P(perfect cube) - P(perfect square and perfect cube) ✓  $\frac{6}{90} + \frac{2}{90} - \frac{1}{90} \checkmark$ 90 7 90 b. P(divisible by 5 or 10)

= P(divisible by 5) +P(divisible by 10) -P(divisible by 5 and 10) ✓

 $+\frac{9}{90}-\frac{9}{90}$  $=\frac{1}{90}$ 90 5

c. P(multiple of 5 or multiple of 7) = P(multiple of 5) +P(multiple of 7) -P(multiple of 5 and 7) ✓  $= \frac{18}{90} + \frac{13}{90} - \frac{2}{90}$ 90

a. P(double or sum less than5) = P(double) + P(sum less)than 5) - P(double and sum than 5j - 1. less than  $5) \checkmark 6 2$  $=\frac{6}{36}+\frac{6}{36}-\frac{2}{36}$ = $\frac{1}{36}$ 5 18

b. P(sum of 5 or sum greater than 4) = P(sum of 5) + P(sumgreater than 4) - P(sum of 5 and sum greater than 4)  $\frac{1}{36} + \frac{30}{36} - \frac{4}{36}$ **√** 4 36 30  $=\frac{30}{36}$  $=\boxed{\frac{5}{6}}$ 

c. P(sum less than 4 or greater than 9) =  $P(sum_less than 4) + P(sum_less than 9) \checkmark$  $\frac{3}{36} + \frac{6}{36}$ = \_\_\_\_\_ **√** 1  $\frac{1}{4}$ 4. a. P(heart or black card)  $= P(heart) + P(black card) \checkmark$ 

 $\frac{13}{52} + \frac{26}{52}$ 52 3  $\overline{4}$ b.  $P(\overline{clu}b \text{ or queen})$ Find the end of the e <u>52</u> ✓ 4 =

r(diamond or red card)  $= P(\text{diamond}) + P(\text{red card}) - P(\text{diamond and red card}) \checkmark$   $= \frac{13}{52} + \frac{26}{52} - \frac{13}{52} \checkmark$   $= \frac{26}{52} \checkmark$   $= \frac{1}{2} \checkmark$ <del>13</del> c. P(diamond or red card)