PRACTICE PROBLEM 1
The doctor orders Phenergan (Promethazine) PR 12.5 mg every 6 hours as needed for nausea. Calculate the dose for a child who weighs 40 lbs and is 38 inches tall using Nomogram Method.

First determine the BSA for this child.

(answer 0.71 M^2)

_____ M^2

Now identify the adult dose.

answer of 12.5

Adult dose = _____ mg

Now that you know what the child's BSA is and the adult dose, you can plug it into the formula

$$\frac{\text{Child's BSA in } M^2}{1.73M^2} \times \text{Adult Dosage}$$

answer of 5.1 mg

_____ mg

"The Nomogram reading for this child is $0.71M^2$. Now plug it into the formula:

$$\frac{0.71 \cancel{M^2}}{1.73 \cancel{M^2}} \times \frac{12.5mg}{} = \frac{195mg}{1.73} = 5.13 \text{ mg} = 5.1 \text{ mg}$$

Because the dose is between 1 and 10 mg, you will round the answer to the nearest tenths place. Therefore, the dose for this child will be 5.1 mg of Pherergan (Promethazine) based on the Nomogram Method."

PRACTICE PROBLEM 2
The doctor orders Erythromycin 250 mg PO four times a day. Calculate the dose for a child who weighs 22lbs and is 30 inches tall using the Nomogram Method.

First determine the BSA for this child.

(answer 0.29M^2)

_____ M^2

child's weight (22 lbs) and height (30 in) and where it crosses the BSA column at 0.29 M^2.

Now identify the adult dose.

answer of 250

Adult dose = _____ mg

"The adult dose can also be the doctor's order. Therefore, the adult dose is 250 mg."

Now that you know what the child's BSA is and the adult dose, you can plug it into the formula

$$\frac{\text{Child's BSA in } M^2}{1.73M^2} \times \text{Adult Dosage}$$

answer of 42 mg

_____ mg

"The Nomogram reading for this child is 0.29M^2. Now plug it into the formula:

$$\frac{0.29\ \cancel{M^2} \times 250mg}{1.73\ \cancel{M^2}} = \frac{72.5mg}{1.73} = 41.9\ mg = 42\ mg$$

Because the dose is greater than 10 mg, you will round the answer to the nearest whole number. Therefore, the dose for this child will be 42 mg of Erythromycin based on the Nomogram Method."

PRACTICE PROBLEM 3
The doctor orders an adult dose of Ampicillin 1 g q 8 hr. Calculate the dose for a child who weighs 35 lbs and is 45 inches tall using the Nomogram Method.

First determine the BSA for this child.

(answer 0.7M^2)

_____ M^2

"The Nomogram reading for this child is 0.7M^2." **Nomogram should pop up indicating the child's weight (35 lbs) and height (45 in) and where it crosses the BSA column at 0.7 M^2.**

Now identify the adult dose.

answer is 1000

Adult dose = _____ mg

"The adult dose can also be the doctor's order. Therefore, the adult dose is 1 g or 1000 mg."

Now that you know what the child's BSA is and the adult dose, you can plug it into the formula

$$\frac{\text{Child's BSA in } M^2}{1.73M^2} \times \text{Adult Dosage}$$

answer is 405 mg

_____ mg

"The Nomogram reading for this child is 0.7M^2. Now plug it into the formula:

$$\frac{0.7\ \cancel{M^2}}{1.73\ \cancel{M^2}} \times \frac{1g}{1000mg} \times \frac{1000mg}{1g} = \frac{700mg}{1.73} = 404.6 \text{ mg} = 405 \text{ mg}$$

Because the dose is greater than 10 mg, you will round the answer to the nearest whole number. Therefore, the dose for this child will be 406 mg of Ampicillin based on the Nomogram Method."

PRACTICE PROBLEM 4

The doctor orders Benedryl (Diphenhydramine) 50 mg PO every 6 hours PRN. Calculate the dose for a 4 year old child using Fried's Rule.

First determine the child's age in months.

answer is 48

_____ months

"The child is 4 years old, therefore --- $4 \frac{\text{years}}{} \times \frac{12 \text{ months}}{1 \text{ year}} = 48$ months

Now identify the adult dose.

answer is 50

Adult dose = _____ mg

"The adult dose can also be the doctor's order. Therefore, the adult dose is 50 mg."

Now that you know the child's age in months and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{child's age in months x Adult Dose}}{150 \text{ months}}$$

answer is 405 mg

_____ mg

Remember, multiply the child's age in months by the adult dose and divide by 150 months.
"Using Fried's Rule, the child dose should be 16 mg."

$$\frac{48 \text{ months} \times 50 \text{ mg}}{150 \text{ months}} = \frac{2400 \text{mg}}{150} = 16 \text{ mg of Benedryl (Diphenhydramine)}$$

PRACTICE PROBLEM 5

The doctor orders Morphine 2 mg IV every 4 hours PRN pain. Calculate the dose for a 2½ year old child using Fried's Rule.

First determine the child's age in months.

answer is 30

_____ months

Remember, there are 12 months in one year."
"The child is 2½ years old, therefore

$$2.5 \text{ } \cancel{\text{years}} \times \frac{12 \text{ months}}{1 \text{ } \cancel{\text{year}}} = 30 \text{ months}$$

Now identify the adult dose.

answer is 2

Adult dose = _____ mg

Remember, the adult dose can also be the doctor's order."
"The adult dose can also be the doctor's order. Therefore, the adult dose is 2 mg."

Now that you know the child's age in months and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{child's age in months x Adult Dose}}{150 \text{ months}}$$

answer is 405 mg

_____ mg

Remember, multiply the child's age in months by the adult dose and divide by 150 months.

"Using Fried's Rule, the child dose should be 0.4mg."

$$\frac{30 \text{ } \cancel{\text{months}} \times 2 \text{ mg}}{150 \text{ } \cancel{\text{months}}} = \frac{60 \text{mg}}{150} = 0.4 \text{ mg of Morphine}$$

PRACTICE PROBLEM 6

The doctor orders Tylenol (Acetaminophen) 500 mg PO PRN pain. Calculate the dose for a 7 year old child using Young's Rule.
First identify the child's age in years.

answer is 7

_____ years

The question states the child is 7 years old.

Now identify the adult dose.

answer is 500

Adult dose = _____ mg

"Try again. Remember, the adult dose can also be the doctor's order."
"The adult dose can also be the doctor's order. Therefore, the adult dose is 500 mg."

Now that you know the child's age in years and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{Child's age in years}}{\text{Child's age in years} + 12 \text{ years}} \times \text{Adult Dose}$$

answer is 184 mg

_____ mg

"Using Young's Rule, the child dose should be 184mg."

$$\frac{7 \cancel{\text{ years}}}{7 \cancel{\text{ years}} + 12 \cancel{\text{ years}}} \times 500 \text{ mg} = \frac{7}{19} \times 500 \text{ mg} = 184.2 \text{ mg} = 184 \text{ mg}$$

PRACTICE PROBLEM 7
The doctor orders an adult dose of 2 million units of Penicillin G potassium per day divided into 4 doses. Calculate the dose per day for a 10 year old child using Young's Rule.

First identify the child's age in years.

answer is 10

_____ years

"The question states the child is 10 years old.

Now identify the adult dose.

answer is 2

Adult dose = _____ million units

"The question states the adult dose is 2 million units.

Now that you know the child's age in years and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{Child's age in years}}{\text{Child's age in years} + 12 \text{ years}} \times \text{Adult Dose}$$

answer is 900,000 or 909,091

_____ units

"Using Young's Rule, the child dose should be 909,091 units."

$$\frac{10 \cancel{\text{ years}}}{10 \cancel{\text{ years}} + 12 \cancel{\text{ years}}} \times 2,000,000 \text{ units} = \frac{10}{22} \times 2,000,000 \text{ units}$$

= 909,090.91 units = 909,091 units

PRACTICE PROBLEM 8

The doctor orders an adult dose of Dilantin (Phenytoin) 100 mg tid. Calculate the dose for a child weighing 25 lbs using Clark's Rule.

First identify the child's weight in pounds.

answer is 25

_____ lbs

"The question states the child weighs 25 lbs.

Box 2
Now identify the adult dose.

answer is 100

Adult dose = _____ mg

"The question states the adult dose is 100 mg.

Now that you know the child's weight and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{Child's weight in lbs x Adult Dose}}{\text{150 lbs}}$$

answer is 17

_____ mg

"Using Clark's Rule, the child dose should be 17 mg."

$$\frac{25 \cancel{\text{lbs}} \times 100 \text{ mg}}{150 \cancel{\text{lbs}}} = \frac{2500 \text{ mg}}{150} = 16.7 \text{ mg} = 17 \text{ mg}$$

PRACTICE PROBLEM 9

The doctor orders an adult dose of Amoxicillin 500 mg q 8 hours. Calculate the dose for a child weighing 18 lbs using Clark's Rule.

First identify the child's weight in pounds.

answer is 18

_____ lbs

"The question states the child weighs 18 lbs.

Now identify the adult dose.

answer is 500

Adult dose = _____ mg

"The question states the adult dose is 500 mg.

Now that you know the child's weight and the adult dose, you can plug it into the formula:

$$\text{Pediatric dose} = \frac{\text{Child's weight in lbs} \times \text{Adult Dose}}{150 \text{ lbs}}$$

answer is 60

_____ mg

"Try again. Remember, multiply the child's weight in lbs by the adult dose and divide by 150 lbs."
"Using Clark's Rule, the child dose should be 60 mg."

$$\frac{18 \cancel{\text{lbs}}}{150 \cancel{\text{lbs}}} \times 500 \text{ mg} = \frac{9000 \text{ mg}}{150} = 160 \text{ mg}$$

PRACTICE PROBLEM 10

The healthcare provider is caring for a pediatric patient that weighs 15 lbs and has 2nd degree burns covering the back torso. The doctor orders fluid resuscitation for this patient. Calculate the correct amount of fluid for the 16 hours following the first 8 hours of fluid replacement.

First identify the TBSA burned % for the patient.

in answer is 18

_____ %

"According to the Lund-Browder Chart, the back torso is 18%"

Now identify the child's weight in kilograms (kg).

answer is 6.82

_____ kg

"Try again. Remember the weight should be in kilograms, not pounds"
"The question states the child weighs 15 lbs. You will need to convert it to kg using the conversion 1 kg = 2.2 lbs.

$$kg = \frac{15\ \cancel{lbs}}{1} \times \frac{1\ kg}{2.2\cancel{lbs}} = 6.82\ kg$$

Now that you know the TBSA burned % and the child's weight in kg, you can plug into the formula:

$$\text{Fluid Requirements} = \text{TBSA burned (\%)} \times \text{Weight (kg)} \times \frac{4\ mL}{1\ kg}\ \text{(RL)}$$

answer is 491

_____ mL

"Using Parkland's formula you should calculate the fluid requirements to be 491 mL.

$$\text{Fluid Requirements} = 18\ \% \times 6.82\ \cancel{kg} \times \frac{4\ mL}{1\ \cancel{kg}} = 18 \times 6.82 \times 4mL = 491.04mL = 491mL$$

Now you will need to determine how much to administer in the first 8 hours.

answer is 246

____ mL should be administer during the 1st 8 hours

"During the 1st 8 hours ½ of the fluid should be administered.

$\frac{491 \text{ mL}}{2}$ = 245.5 mL = 246 mL over the first 8 hours

Next you will need to determine how much to administer over the next 16 hours.

answer is 245

_____ mL to be administered over the 16 hours

"During the next 16 hours the 2nd half of volume is to be administered.

Total Volume Required – Volume Administered 1st 8 hours
491 mL – 246 mL = 245 mL

PRACTICE PROBLEM 11

The healthcare provider is caring for a pediatric patient that weighs 25 lb and has 2nd degree burns covering the right arm and right leg. The doctor orders fluid resuscitation for this patient. Calculate the correct amount of fluid for the first 8 hours according to Parkland's burn formula.

First identify the TBSA burned % for the patient.

answer is 23

_____ %

"Try again. Remember the patient is burned on two parts of their body"
"According to the Lund-Browder Chart, the right arm is 9% and the right leg is 14%. Therefore, the TBSA is 9% + 14% = 23%"

Now identify the child's weight in kilograms (kg).

answer is 11.36

_____ kg

"Try again. Remember the weight should be in kilograms, not pounds"
"The question states the child weighs 25 lbs. You will need to convert it to kg using the conversion 1 kg = 2.2 lbs.

$$kg = \frac{25\ \cancel{lbs}}{1} \times \frac{1\ kg}{2.2\cancel{lbs}} = 11.36\ kg$$

Now that you know the TBSA burned % and the child's weight in kg, you can plug into the formula:

$$\text{Fluid Requirements} = \text{TBSA burned (\%)} \times \text{Weight (kg)} \times \frac{4\ mL}{1\ kg}\ \text{(RL)}$$

answer is 1045

_____ mL

"Using Parkland's formula you should calculate the fluid requirements to be 1045 mL.

$$\text{Fluid Requirements} = 23\% \times 11.36\cancel{kg} \times \frac{4mL}{1\ \cancel{kg}} = 23 \times 11.36 \times 4mL = 1045.12mL = 1045mL$$

Now you will need to determine how much to administer in the first 8 hours.

answer is 523

____ mL should be administer during the 1st 8 hours

"During the 1st 8 hours ½ of the fluid should be administered.

$\frac{1045 \text{ mL}}{2}$ = 522.5 mL = 523 mL over the first 8 hours

PRACTICE PROBLEM 12

The healthcare provider is caring for a pediatric patient that weighs 40 lbs and has 2nd degree burns covering the legs bilaterally. The doctor orders fluid resuscitation for this patient. Calculate the correct amount of fluid for the first 24 hours post-burn according to Parkland's burn formula providing the overall amount of fluid needed.

First identify the TBSA burned % for the patient.

answer is 28

_____ %

"Try again. Remember the patient is burned on two parts of their body"
"According to the Lund-Browder Chart, each leg is 14%.
Therefore, the TBSA is 14% + 14% = 28%"

Now identify the child's weight in kilograms (kg).

answer is 18.18

_____ kg

"Try again. Remember the weight should be in kilograms, not pounds"
"The question states the child weighs 40 lbs. You will need to convert it to kg using the conversion 1 kg = 2.2 lbs.

$\text{kg} = \frac{40 \cancel{\text{lbs}}}{1} \times \frac{1 \text{ kg}}{2.2 \cancel{\text{lbs}}} = 18.18 \text{ kg}$

Now that you know the TBSA burned % and the child's weight in kg, you can plug into the formula:

$\text{Fluid Requirements} = \text{TBSA burned (\%)} \times \text{Weight (kg)} \times \frac{4 \text{ mL}}{1 \text{ kg}} \text{ (RL)}$

answer is 2036

_____ mL

“Using Parkland’s formula you should calculate the fluid requirements to be 1045 mL.

Fluid Requirements = 28% x 18.18~~kg~~ x $\frac{4\text{mL}}{1\ \text{~~kg~~}}$ = 28x18.18 x 4mL = 2036.16mL = 2036mL