VERSION 5

ANTEPARTUM

Stages of Pregnancy

- The third through eighth weeks after conception are called the embryonic stage.
- The fetal period starts 9 weeks after conception and lasts through the end of gestation.

Fetal Development: Embryonic Stage

Week 1

- Free-floating blastocyst

Weeks 2 to 3

- The embryo is 1.5 to 2 mm long.
- Lung buds appear.
- Blood circulation begins.
- The heart is tubular.
- The neural plate becomes the brain and spinal cord.

Week 5

- The embryo is 0.4 to 0.5 cm long.
- The embryo weighs 0.4 g.
- **Double heart chambers are visible.**
- **The heart beats**.
- Limb buds begin to form.

Week 8

- The embryo is 3 cm long.
- The embryo weighs 2 g.
- The eyelids begin to fuse.
- The circulatory system through the umbilical cord is well established.

- Every organ system is present.

Week 12

- Fetus is 6 to 9 cm long.
- Fetus weighs 19 g.
- Face is well formed.
- Limbs are long and slender.
- Kidneys begin to form urine.
- Spontaneous movements occur.
- **Heartbeat is detectable with a Doppler transducer between 10 and 12 weeks.**
- Sex is visually recognizable.

Week 16

- Fetus is 11.5 to 13.5 cm long.
- Fetus weighs 100 g.
- **Active movements are present**.
- Skin is transparent.
- Lanugo hair begins to develop.
- Skeletal ossification takes place.

Week 20

- Fetus is 16 to 18.5 cm long.
- Fetus weighs 300 g.
- **Lanugo covers the entire body.**
- Fetus has fingernails and toenails.
- Muscles are developed.
- Enamel and dentin are being deposited.
- **Heartbeat is detectable with a regular (nonelectronic) fetoscope.**

Week 24

- Fetus is 23 cm long.
- Fetus weighs 600 g.
- Hair on head is well formed.
- Skin is reddish and wrinkled.
- Reflex hand grasp is functioning.
- Vernix caseosa covers the entire body.
- **Fetus can hear.**

Week 28

- Fetus is 27 cm long.
- Fetus weighs 1100 g.
- Limbs are well flexed.
- Brain is developing rapidly.
- Eyelids open and close.
- Lungs are developed sufficiently to provide gas exchange (lecithin forming).
- If born at this time, neonate can breathe.

Week 32

- Fetus is 31 cm long.
- Fetus weighs 1800 to 2100 g.
- Bones are fully developed.
- Subcutaneous fat has accumulated.
- Lecithin-to-sphingomyelin (L/S) ratio is 2:1.

Week 36

- Fetus is 35 cm long.
- Fetus weighs 2200 to 2900 g.
- Skin is pink and the body rounded.
- Skin is less wrinkled.
- Lanugo is disappearing.
- L/S ratio is higher than 2:1.

Week 40

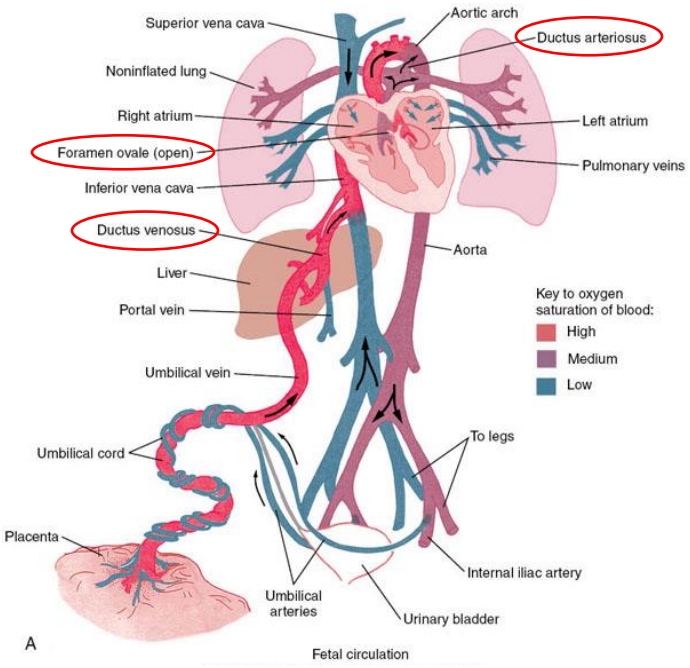
- Fetus is 40 cm long.
- Fetus weighs 3200 g or more. 3Kg
- Skin is pinkish and smooth.
- Lanugo remains on the upper arms and shoulders.
- Vernix caseosa coverage decreases.
- Fingernails extend beyond fingertips.
- Sole (plantar) creases run down to the heels.
- Testes are in the scrotum.
- Labia majora are well developed.

Present because of the fetus' *nonfunctioning lungs*, bypasses must close after birth to allow blood to flow through the lungs and the liver.

Fetal Circulation

Umbilical Cord

- Cord contains two arteries and one vein.
- Arteries carry deoxygenated blood and waste products from the fetus.
- Vein carries oxygenated blood and provides oxygen and nutrients to the fetus.



- The ductus arteriosus connects the pulmonary artery to the aorta, bypassing the lungs.
- The ductus venosus connects the umbilical vein and the inferior vena cava, bypassing the liver.
- The foramen ovale is the opening between the right and the left atria of the heart, bypassing the lungs

Remember AVA: two arteries and one vein.

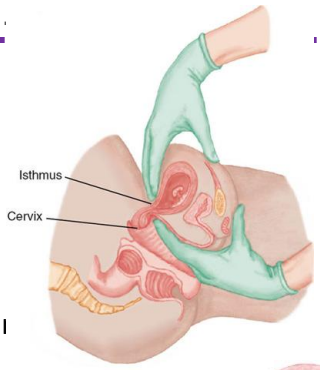
- The arteries carry deoxygenated blood and waste products away from the fetus to the placenta, where these substances are transferred to the mother's circulation.
- The umbilical vein carries freshly oxygenated and nutrient-laden blood from the placenta back to the fetus.

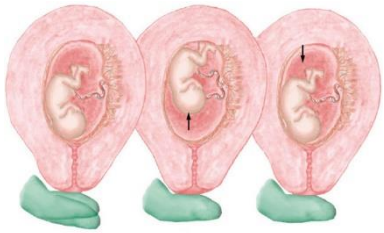
Fetal HR: 160 to 170 beats/min in the first trimester but slowing with fetal growth to 120 to 160 beats/min near or at term.

Nagele's rule : Used to determine the estimated date of delivery/ beginning of treatment.

- ❖ Subtract 3 months from the first day of the last menstrual period (LMP), add 7 days, and then adjust the year as necessary.

- **G** stands for gravidity, or the number of pregnancies, including the current one.
- **T** represents term births, the number of children born at term (longer than 37 weeks' gestation).
- **P** is preterm births, the number of children born before 37 weeks' gestation.
- **A** represents abortions and miscarriages, the number of abortions and/or miscarriages (included in gravida if before 20 weeks' gestation; included in *parity* if past 20 weeks' gestation). Note that the termination of a pregnancy after 20 weeks is referred to as therapeutic termination.
- **L** stands for the number of current living children.





Signs of Pregnancy

Presumptive Signs

- Amenorrhea
- Nausea and vomiting
- Increased size and feeling of fullness in bı
- Pronounced nipples
- Urinary frequency
- Quickening
- Fatigue
- Discoloration and thickening of the vaginal mucosa

Probable signs

- Uterine enlargement
- Hegar sign
- Goodell sign: Softening of the cervix
- Chadwick sign: Violet coloration of the mucous membranes
- Ballottement: Rebounding of the fetus against the examiner's finger on palpation.
- Positive result on pregnancy test for human chorionic gonadotropin (hCG)

Positive signs

- Fetal heart rate, detectable with an electronic device (Doppler transducer) at 10 to 12 weeks and with a nonelectronic device (fetoscope) at 20 weeks of gestation
- Active fetal movements palpable by examiner
- Outline of fetus on ultrasound

Fundal Height: The fundal height is measured to help gauge the fetus' gestational age.
fundal height in centimeters approximately equals the fetus's age in weeks, plus or minus 2 cm.

In the early weeks of pregnancy, the cervix softens as a result of pelvic congestion (Goodell sign). Cervical softening is noted on physical examination. The presence of the Goodell sign is a probable indication of pregnancy. Another probable indication of pregnancy is the Chadwick sign, in which the cervix changes from pink to a violet color. Presumptive indications of pregnancy are also termed subjective changes because they are experienced and reported by the woman. Positive indications of pregnancy include auscultation of fetal heart sounds, fetal movement felt by the examiner, and visualization of the fetus on ultrasonography.

When a pregnant woman is in the supine position, particularly during the second and third trimesters, the weight of the gravid uterus partially occludes the vena cava and descending aorta. The occlusion impedes return of blood from the lower extremities and consequently reduces cardiac return, cardiac output, and blood pressure. This is known as supine hypotensive syndrome. Symptoms include faintness, lightheadedness, dizziness, and agitation. A lateral recumbent position alleviates the pressure on the blood vessels and quickly corrects supine hypotension. Although the nurse may take the woman's blood pressure, this is not the action to take immediately. It is not necessary to call the obstetrician to the examining room. Placing a cool cloth on the woman's forehead will not alleviate the problem.

Urinalysis and Urine Culture

- A urine specimen for glucose and protein determinations should be obtained at every prenatal visit.
- Glycosuria is a common result of the decreased renal threshold that occurs during pregnancy.

- Persistent glycosuria may indicate diabetes.
- White blood cells in the urine may indicate infection.
- Ketonuria may result from insufficient food intake or vomiting.
- Levels of 2+ to 4+ protein in the urine may indicate infection or preeclampsia.

If the client is Rh negative and the result of an antibody screen is negative, she will need repeat antibody screens and should receive Rh immune globulin around 28 weeks' gestation to prevent the formation of anti-Rh antibodies. An Rh-negative woman should also receive Rh immune globulin within 72 hours of delivery if her newborn is Rh-positive. On the basis of the data provided in the question, the other options are incorrect.

Amniocentesis is a relatively simple and safe procedure that permits the diagnosis of many fetal anomalies and confirms fetal maturity. It is a relatively painless procedure that takes only a short amount of time. Ultrasonography is used to locate the fetus and placenta and identify the largest pockets of amniotic fluid that can safely be sampled. A small amount of local anesthetic may be injected into the skin. The woman may feel pressure as the needle is inserted and mild cramping as the needle enters the myometrium. Informed consent will need to be provided by the client before the procedure. Although risks are associated with the procedure, the need for several informed consents to be signed is not warranted.

Maternity
Nursing 214

- A nurse is caring for a client who is pregnant and states that her last menstrual period was April 1, 2013. Which of the following is the client’s estimated date of delivery?

A. Jan. 8, 2014
B. Jan. 15, 2014
C. Feb. 8, 2014
D. Feb. 15, 2014
A.
Jan. 8, 2014

- A nurse in a prenatal clinic is caring for a client who is in the first trimester of pregnancy. The client's health record includes this data: G3 T1 P0 A1 L1. How should the nurse interpret this information? (Select all that apply)

A. Client has delivered one newborn at terms.
B. Client has experienced no preterm labor.
C. Client has been through active labor.
D. Client has had two prior pregnancies.
E. Client has one living child.
A. Client has delivered one newborn at terms.
D. Client has had two prior pregnancies.

E. Client has one living child.

- A nurse is reviewing the health record of a client who is pregnant. The provider indicated the client exhibits probable signs of pregnancy. Which of the following would be included? (Select all that apply)

A. Montgomery's glands
B. Goodall's sign
C. Ballottement
D. Chadwick's sign
E. Quickening
B. Goodall's sign
C. Ballottement
D. Chadwick's sign

- A nurse in a prenatal clinic is caring for client who is pregnant and experiencing episodes of maternal hypotension. The client asks the nurse what causes these episodes. Which of the following is an appropriate response by the nurse?

A. "This is due to an increase in blood volume."
B. "This is due to pressure from the uterus on the diaphragm"
C. "This is due to the weight of the uterus on the vena cava."
D. "This is due to increased cardiac output."
C. "This is due to the weight of the uterus on the vena cava."

- A nurse in a clinic receives a phone call from a client who believes she is pregnant and would like to be tested in the clinic to confirm her pregnancy. Which of the following information should the nurse provide to the client?

A. "You should wait until 4 weeks after conception to be tested."
B. "You should be off any medication for 24 hours prior to the test."
C. "You should be NPO for at least 8 hours prior to the test."
D. "You should collect urine from the first morning void."
D. "You should collect urine from the first morning void."

- A nurse is teaching a group of women who are pregnant about measures to relieve backache during pregnancy. The nurse should should teach the women which of the following? (Select all that apply)

A. Avoid any lifting
B. Perform Kegel exercises twice a day.
C. Perform the pelvic rock exercise every day.
D. Use proper body mechanics.
E. Avoid constrictive clothing.
C. Perform the pelvic rock exercise every day.
D. Use proper body mechanics.

- A client who is at 8 weeks of gestation tells the nurse that she isn't sure she is happy about being pregnant. Which of the following is an appropriate response by the nurse to the client's statement?

A. "I will inform the provider that you are having these feelings."
B. "It is normal to have these feelings during the first few months of pregnancy."
C. "You should be happy that you are going to bring new life into the world."
D. "I am going to make an appointment with the counselor for you to discuss these thoughts."
B. "It is normal to have these feelings during the first few months of pregnancy."

- A nurse is caring for a client who is pregnant and reviewing signs of complications that should be promptly reported to the provider. Which of the following should be included?

A. Vaginal bleeding
B. Swelling
C. Heartburn after eating
D. Lightheadedness when lying on back
A. Vaginal bleeding

- A client who is at 7 weeks of gestation is experiencing nausea and vomiting in the morning. The nurse in the prenatal clinic provides teaching that should include which of the following?

A. Eat crackers or plain toast before getting out of bed.
B. Awaken during the night to eat a snack
C. Skip breakfast and eat lunch after nausea has subsided
D. Eat a large evening meal.
A. Eat crackers or plain toast before getting out of bed.

- A nurse is teaching a group of clients who are pregnant about behaviors to avoid during pregnancy. Which of the following statements by a client indicates a need for further instruction?

A. "I can have a glass of wine with dinner."
B. "Smoking is a cause of low birth weight in babies."
C. "Signs of infection should be reported to my doctor."
D. "I should not take over-the-counter medications without checking with my obstetrician."
A. "I can have a glass of wine with dinner."

- A nurse in a prenatal clinic is providing education to a client who is in the 8th week of gestation, The client states that she does not like milk. What is a good source of calcium that the nurse can recommend to the client?

A. Dark green, leafy vegetables
B. Deep red or orange vegetables
C. White bread and rice
D. Meat, poultry, and fish
A. Dark green, leafy vegetables

- A nurse in a prenatal clinic is caring for a group of clients. Which of the following clients should the nurse be concerned about regarding weight gain?

A. 1.8kg (4lb) weight gain and is in her first trimester
B. 3.6kg (8lb) weight gain and is in her first trimester
C. 6.8kg (15lb) weight gain and is in her second trimester
D. 11.3kg (25lb) weight gain and is in her third trimester
B. 3.6kg (8lb) weight gain and is in her first trimester

- A nurse in clinic is teaching a client of childbearing age about recommended folic acid supplements. Which of the following defects can occur in the fetus or neonate as a result of folic acid deficiency?

A. Iron deficiency anemia
B. Poor bone formation
C. Macrosomic fetus
D. Neural tube defects
D. Neural tube defects

- A nurse is reviewing a new prescription for iron supplements with a client who is in the 8th week of gestation and has iron deficiency anemia. The nurse should advise the client to take the iron supplements with which of the following?

A. Ice water
B. Low-fat or whole milk
C. Tea or coffee
D. Orange juice
D. Orange juice

- A nurse is reviewing postpartum nutrition needs with a group of new mothers who are breastfeeding their newborns. Which of the following statements by a member of the group requires clarification?

A. "I am glad I can have my morning coffee."
B. "I know that certain foods that I eat will affect my baby."
C. "I will continue adding 330 calories per day to my diet."
D. "I will continue my calcium supplements because I don't like milk."
A. "I am glad I can have my morning coffee."

- A nurse is caring for a client and reviewing the findings of the client's biophysical profile (BPP). Which of the following variables are included in this test? (Select all that apply)

A. Fetal weight
B. Fetal breathing movement
C. Fetal tone
D. Reactive FHR
E. Amniotic fluid volume
B. Fetal breathing movement
C. Fetal tone

D. Reactive FHR
E. Amniotic fluid volume

- A nurse is caring for a client who is in preterm labor and is scheduled to undergo an amniocentesis to assess fetal lung maturity. Which of the following is a test for fetal lung maturity?

A. Alpha-fetoprotein (AFP)
B. Lecithin/sphingomyelin (L/S) ratio
C. Kleihauer-Betke test
D. Indirect Coomb's test
B. Lecithin/sphingomyelin (L/S) ratio

- A nurse is caring for a client who is pregnant and undergoing a nonusers test. The client asks why the nurse is using an acoustic vibration device. Which of following is an appropriate response by the nurse?

A. "It is used to stimulate uterine contractions."
B. "It will decrease the incidence of uterine contractions."
C. "It lulls the fetus to sleep."
D. "It awaken a sleeping fetus."
D. "It awaken a sleeping fetus."

- A nurse is teaching a client who is pregnant about the amniocentesis procedure. Which of the following statements by the client requires clarification?

A. "I will report cramping or signs of infection to the physician."
B. "I should drink lots of fluids during the 24 hours following the procedure."
C. "I need to have a full bladder at the time of the procedure."
D. "The test is done to detect genetic abnormalities."
C. "I need to have a full bladder at the time of the procedure."

- A nurse is caring for a client who is pregnant and is to undergo a contraction stress test (CST). Which of the following findings are indications for the procedure? (Select all that apply)

A. Decreased fetal movement
B. Intrauterine growth restriction (IUGR)
C. Postmaturity
D. Advanced maternal age
E. Amniotic fluid emboli
A. Decreased fetal movement
B. Intrauterine growth restriction (IUGR)
C. Postmaturity
D. Advanced materal age

- A nurse in L&D receives a phone call from a client who reports that her contractions started about 2 hrs ago, did not go away when she had 2 glasses of water and rested, and became stronger since she started walking. Her contractions occur every 10 mins

and last about 30 seconds. She hasn't had much fluid leak from her vagina. However, she saw some blood when she wiped after voiding. Based on this report the nurse should recognize that the client is experiencing

A. Braxton Hicks contractions
B. rupture of membranes
C. fetal decent
D. true contractions
D. True contractions

- A nurse in L&D is caring for a client in labor and applies an external fetal monitor and tocotranducer. The FHR is around 140/min. Contractions are every 8 min and 30-40 seconds in duration. The nurse performs a vaginal exam and finds the cervix is 2cm dilated, 50% effaced, and the fetus is at -2 station. Which of the following stages and phases of labor is this client experiencing?

A. The 1st stage, latent phase
B. The 1st stage, active phase
C. The 1st stage, transition phase
D. The 2nd stage of labor
A. The 1st stage, latent phase

- A client experiences a large gush of fluid from her vagina while walking in the hallway of the birthing unit. The nurse's first action after establishing that the fluid is amniotic fluid should be to

A. Asses the amniotic fluid for meconium
B. Monitor the FHR for distress
C. Dry the client and make her comfortable
D. Monitor the client's uterine contractions.
B. Monitor the FHR for distress

- A nurse in L&D is completing an admission history for a client who is at 39 weeks of gestation. The client reports that she has been leaking fluid from her vagina for 2 days. The nurse knows that this client is at risk for

A. Cord Prolapse
B. Infection
C, Postpartum hemorrhage
D. Hydramnios
B. Infection

- A nurse is caring for a client who is in active labor and becomes nauseous and vomits. The client is very irritable and feels the urge to have a bowel movement. She states, "I've had enough. I can't do this anymore. I want to go home right now." the nurse knows that these signs indication the client is in the

A. 2nd stage of labor
B. 4th stage of labor

C. transition phase of labor
D. latent phase of labor
C. transition phase of labor

- A nurse is caring for a client at 40 weeks of gestation who is experiencing contraction every 3 to 5 min and becoming stronger. A vaginal exam reveals that the client's cervix is 3 cm dilated, 80% effaced and -1 station. The client asks for pain medication. Which of the following actions should the nurse take at the time? (Select all that apply)

A. Encourage the use of patterned breathing techniques
B. Insert an indwelling urinary catheter
C. Administer opioid analgestic medication as prescribed
D. Suggest application of cold
E. Provide ice chips.
A. Encourage the use of patterned breathing techniques
C. Administer opioid analgestic medication as prescribed
D. Suggest application of cold

- A nurse is caring for a client who is in active labor. The client reports lower back pain. The nurse suspects that this pain is related to a persistent occiput posterior fetal position. Which of the following nonpharmocological nursing interventions is appropriate?

A. abdominal effleurage
B. sacral counterpressure
C. showing if not contraindicated
D. back rub and massage
B. sacral counterpressure

- A nurse is caring for a client following the administration of an epidural block and is preparing to administer a prescribed IV fluid bolus. The client's partner asks about the purpose of the IV fluids. Which of the following is an appropriate response by the nurse?

A. "It is needed to promote increased urine output."
B. "It is needed to counteract respiratory depression."
C "It is needed to counteract hypotension."
D. "It is needed to prevent olihohyramnios"
C "It is needed to counteract hypotension."

- A nurse in L&D is caring for a client who is in the 2nd stage of labor. The client's labor has been progressing and she is expected to deliver vaginally in 20 mins. The provider is preparing to administer lidocaine (Xylocaine) for pain relief and perform an episiotomy. The nurse should know that the type of regional anesthetic block that is to be administered is which of the following?

A. Pudendal block
B. Epidural block
C. Spinal block

D. Paracervical black
A. Pudendal block

- A nurse in L&D is caring for a client who is using patterned breathing during labor. The client reports numbness and tingling of the fingers. Which of the following actions should the nurse take?

A. Administer oxygen via nasal cannula at 2L
B. Apply a warm blanket
C. Assist the client to a side-lying position
D. Place an oxygen mask over the client's nose and mouth.
D. Place an oxygen mask over the client's nose and mouth.

- A nurse is providing care for client who is in active labor. Her cervix is dilated to 5cm, and her membranes are intact. Based on the use of external fetal monitoring, the nurse notes a FHR of 115 to 125/min with occasional increases up to 150-155/min that last for 25 seconds and have beat-to-beat variability of 20/min. There is no showing of FHR from the baseline. The nurse should recognize that this client is exhibiting signs of which of the following? (Select all the apply)

A. Moderate variability
B. FHR accelerations
C. FHR decelerations
D. Normal baseline FHR
E. Fetal tachycardia
A. Moderate variability
B. FHR accelerations
D. Normal baseline FHR

- A nurse is caring for a client who is having an induction of labor. Based on the use of external electronic fetal monitoring, the nurse notes that the FHR variability is decreased and resembles a straight line. The client has not received pain meds. Which of the following should occur first before the nurse can apply an internal scalp electrode?

A. Dilation
B. Rupture of the membranes
C. Effacement
D. Engagement
B. Rupture of the membranes

- A nurse is reviewing the electronic monitor tracing of a client who is in active labor. The nurse knows that a fetus received more oxygen when which of the following appears on the tracing?

A. Peak of the uterine contraction
B. Moderate variability
C. FHR acceleration

D. Relaxation between uterine contractions
D. Relaxation between uterine contractions

- A nurse is caring for a client who is in labor and observes late decelerations on the electronic fetal monitor. Which of the following is the first action the nurse should take?

A. Assist the client into the left-lateral position
B. Apply a fetal scalp electrode
C. Insert and IV catheter
D. Perform a vaginal exam
A. Assist the client into the left-lateral position

- A nurse is performing Leopold maneuvers on a client who is in labor. Which of the following techniques should the nurse use to identify the fetal lie?

A. Apply palms of both hands to sides of uterus.
B. Palpate the fundus of the uterus
C. Grasp lower uterine segment between thumb and fingers.
D. Stand facing client's feet with fingertips outlining cephalic prominence.
B. Palpate the fundus of the uterus

- A nurse is caring for a client and her partner during the second stage of labor. The client's partner asks the nurse to explain how he will know when crowning occurs. Which of the following is an appropriate response by the nurse?

A. "The placenta will protrude from the vagina."
B. "Your partner will report a decrease in the intensity of contractions."
C. "The vaginal area will bulge as the baby's head appears."
D. "Your partner will report less rectal pressure."
C. "The vaginal area will bulge as the baby's head appears."

- A nurse is caring for a client in the third stage of labor. Which of the following findings indicate that placental separation has occurred? (select all that apply)

A. Lengthening of the umbilical cord.
B. Swift gush of clear amniotic fluid.
C. Softening of the lower uterine segment.
D. Appearance of dark blood from the vagina.
E. Fundus is firm upon palpation.
A. Lengthening of the umbilical cord.
D. Appearance of dark blood from the vagina.
E. Fundus is firm upon palpation.

- A nurse is caring for a client who is in the transition phase of labor and reports that she needs to have a bowel movement with the peak of contractions. Which of the following is an appropriate nursing intervention?

A. Assist the client to the bathroom.
B. Prepare for an impending delivery.
C. Prepare to remove a fecal impaction.