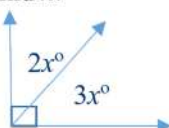


2.3 Worksheet Solutions:

- 1) Deductive Reasoning
- 2) Deductive Reasoning
- 3) Inductive Reasoning
- 4) Valid; Law of Detachment
- 5) Invalid; Dante could afford the car payment because he was given money as a gift or because he paid off other bills.
- 6) Invalid; Michelle could live in another state that does not have any beaches, such as Kansas.
- 7) Valid
- 8) no valid conclusion; the lines might not intersect at all but could be parallel or on different planes.
- 9) If the measure of an angle is between 90 and 180, then it is not acute.

For #10 – 11, find x .

10)

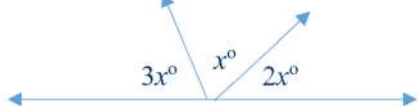


$$2x + 3x = 90$$

$$5x = 90$$

$$x = 18$$

11)



$$3x + x + 2x = 180$$

$$6x = 180$$

$$x = 30$$

12 Given: $5(2x - 4) + 7 = 37$ Prove: $x = 5$	13 Given: $\frac{2}{5}y - 8 = 14$ Prove: $y = 55$
$5(2x - 4) + 7 = 37$ $10x - 20 + 7 = 37$ $10x - 13 = 37$ $10x = 50$ $x = 5$	<p style="text-align: center;">Given</p> Distributive Prop Combine Like Terms Addition Prop = Division Prop =
	$\frac{2}{5}y - 8 = 14$ $\frac{2}{5}y = 22$ $y = 55$
	<p style="text-align: center;">Given</p> Addition Prop = Multi Prop =

14) Given: $\frac{8-2x}{4} = 32$ Prove: $x = -60$	
1) $\frac{8-2x}{4} = 32$	1) Given
2) $8 - 2x = 128$	2) Mult Prop of =
3) $-2x = 120$	3) Subtraction Prop of =
4) $x = -60$	4) Division Prop of =

15) (not a proof): If $16 + 4x$ is 10 more than 14, what is the value of x ?

$$16 + 4x = 14 + 10$$

$$16 + 4x = 24$$

$$4x = 8$$

$$x = 2$$

16) Given $f = cd^3$, $f = 450$, and $d = 10$, what is c ? Exact answers only (no decimals.)

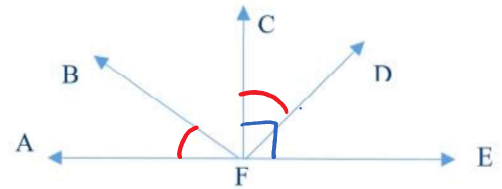
$$450 = c(10)^3$$

$$450 = 1000c$$

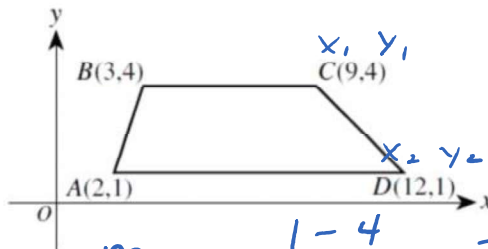
$$c = \frac{450}{1000} = \frac{9}{20}$$

17) In the diagram, $m\angle CFE = 90$ and $\angle AFB \cong \angle CFD$. Which of the following conclusions does not have to be true?

- A) $m\angle AFC = 90$ True
- B) BF bisects $\angle AFD$.
- C) $m\angle CFD = m\angle AFB$ True
- D) $\angle CFE$ is a right angle. True



18) Trapezoid $ABCD$ is graphed in the standard (x,y) coordinate plane below.



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m_{CD} = \frac{1 - 4}{12 - 9} = \frac{-3}{3} = -1$$

What is the slope of \overline{CD} ?

- A. -3
- B. -1
- C. 1
- D. $\frac{5}{21}$
- E. $\frac{3}{2}$

19) A pilot is flying an airplane on a straight path from Norfolk to Madison. On the trip, the pilot stops to refuel exactly halfway in between at Columbus and decides to program the autopilot for the rest of the trip. The pilot knows the coordinates for Norfolk are $(36.9, -76.3)$ and the coordinates for Columbus are $(39.9, -83.0)$. What coordinates should the pilot use for Madison?

- A. $(-1.5, -3.3)$
- B. $(61.5, 56.6)$
- C. $(33.9, -69.6)$
- D. $(42.9, -89.7)$

