Review 2

1. Solve for the unknowns.

a) $\frac{2t-6}{4}+\frac{2t-2}{2}=-1$

b) $8(a+3)=3a-4(12-a)$

2. Simplify fully so that each polynomial is in its "best" form, then, identify your answer as a monomial, binomial or trinomial, and state its degree.

a) $4\left(xy^2\right)^3(2xy)^2\div 8x^2y^5$

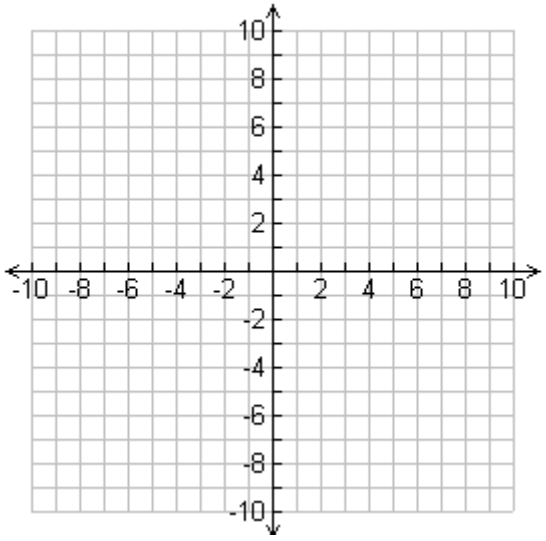
b) $2x(4x-3)-4\left(3x^2-2x\right)$

3. Calculate the slope of the line between the following points.
(a) (9, 3) and (5, 3) (b) (7, 4) and (7, 8) (c) (3, 2) and (2, 8)

4. Determine the length of the line segment joining the two given points (4,-7) and (-2, 3).

5. Calculate the lengths of the following line segments

1) A(-2, 4), B(5, -3) 2) A(0, -4), B(4, 5)



6. (i) For each line, determine the slope, the x - intercept and the y - intercept.

(ii) Graph and label each line on the grid.
(a)y = 4x - 8 (b) 3x + 2y - 6 = 0 (c) 5x - 2y + 12 = 0

(iii) Which line is parallel to the line 4x - y + 2 = 0?

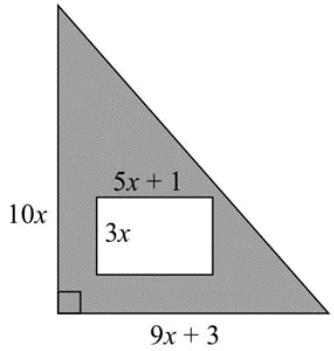
(iv) Which line is perpendicular to y = -2/5 x + b

7. What is the equation of the line perpendicular to 2x - 5y + 4 = 0, with the same x-intercept as 2x + y -10 = 0?

8. The sum of three consecutive even integers is 468. What is the smallest of the three integers?

9. Find the equation of a line with a slope of –3, passing through (2, –5).

10. Use the figure to answer the following questions.



a) Determine a simplified expression for the perimeter of the rectangle.

b) Determine the perimeter of the rectangle when x = 6 cm.

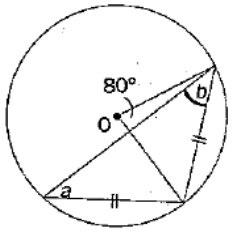
c) Determine a simplified expression for the area of the triangle.

d) Determine the area of the triangle when $x = 6$ cm.

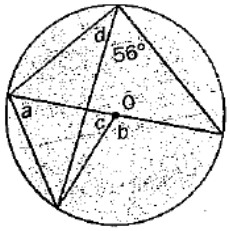
e) Determine a simplified expression for the number of square centimetres it would take to cover the shaded portion of the triangle.

11.

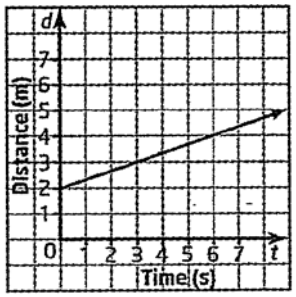
a)



b)



12. The distance-time graph illustrates a person's movements in front of a motion sensor.

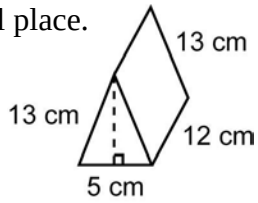


a) Identify the slope and the d-intercept. Explain what they mean.

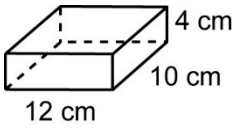
b) Write an equation in the form d = mt + b that describes the walker's motion.

13. Find the surface area and volume of each object. Round your answers to one decimal place.

a)



b)



14. Wendy has 20 m of fencing. She plans to enclose an area in her yard. The fourth side of the area has a hedge, so she only needs to fence three sides. What is the greatest area Wendy can enclose?

15. Suppose you plan to build a box with a volume of 120 cm^3.

a) What are the dimensions of the box?
b) What is the least amount of material required to build the box?

16. The volume of a cylinder is 700 cm^3. What are the radius and height of the cylinder if it has the least surface area possible?