Name: _____ Date: _____ ID: A

Math 9 Final Exam Prep

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Subtract: $(3y^2 - 7x^2 + 5) - (3x - 9 + 5y^2)$

a. $3y^2 - 10x^2 + 14$
b. $-7x + 14$
c. $-2y^2 - 7x^2 - 3x + 14$
d. $-2y^2 - 7x^2 - 3x - 4$

____ 2. Evaluate: $(-10^5)^0$

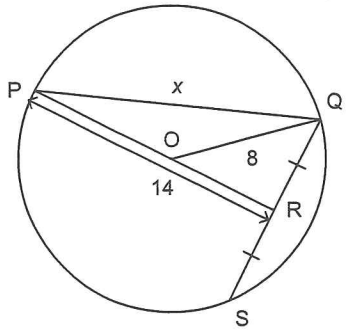
a. -50 b. 50 c. 1 d. -1

____ 3. Determine this difference.

$-\frac{6}{5} - \frac{1}{4}$

a. $\frac{19}{20}$ b. $\frac{29}{20}$ c. $-\frac{19}{20}$ d. $-\frac{29}{20}$

____ 4. O is the centre of the circle.
Determine the value of x to the nearest tenth, if necessary.



a. 15 b. 5.3 c. 224 d. 17.2

____ 5. Evaluate: $10^2 \times 10^5 + 10^4$

a. 100 000 000 000
b. 10 000 010 000
c. 110
d. 10 010 000

____ 6. Which expression has a value of 0?

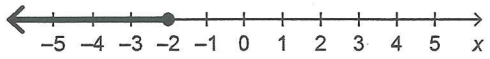
i) $-(-7)^0 + 2 \times (-5)^0 - (-4)^0$
ii) $(7 \times 5)^0 - (5 - 4)^2 + (8 - 5)^0$
iii) $5 - (4 \div 4)^2 - (-8)^0$
iv) $(4 \times 4 \div 8) - (5^2 - 7^2)^0 - (-7)^0$

a. ii and iii b. i and iv c. i, iii, and iv d. i, ii, and iv

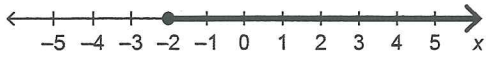
____ 7. Which of these graphs represent the solution of the inequality $4x \geq -8$?

i)

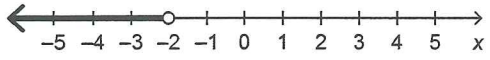
ii)



iii)



iv)



a. Graph i b. Graph ii c. Graph iii d. Graph iv

____ 8. Evaluate: -9^0

a. 9 b. –1 c. 0 d. 1

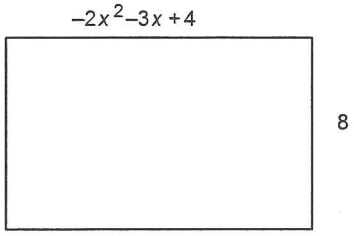
____ 9. Solve: $9 - 5x = 2x - 12$

a. $x = 3$ b. $x = \frac{1}{3}$ c. $x = -3$ d. $x = -\frac{1}{3}$

____ 10. Solve: $\frac{x}{4} + \frac{7}{2} = \frac{11}{4}$

a. $x = -3$ b. $x = 4$ c. $x = 8$ d. $x = -12$

____ 11. Determine the area of this rectangle.



a. $16x^2 - 3x + 4$ c. $-10x^2 - 3x + 4$

b. $-16x^2 - 24x + 32$ d. $-10x^2 - 11x - 4$

____ 12. Which power is positive?

i) $(7)^5$ ii) $(-7)^5$ iii) $-(7)^5$ iv) $-(-7)^5$

a. i and iv b. i, ii, and iv c. i and ii d. iii and iv

____ 13. Add: $(5x^2 - 2x) + (-4 - 2x^2)$

a. $5x^2 + 2x - 2x$ c. $3x^2 - 2x + 4$

b. $3x^2 - 2x - 4$ d. $3x^2 - 5x - 4$

____ 14. Determine this quotient.

$\frac{5}{2} \div \left(\frac{6}{5}\right)$

a. 3 b. $\frac{1}{3}$ c. $\frac{25}{12}$ d. $\frac{12}{25}$

____ 15. Multiply: $8(3x^2 - 2x)$

a. $24x^2 - 2x$ b. $11x^2 - 6x$ c. $24x^2 + 6x$ d. $24x^2 - 16x$

____ 16. Evaluate: $(5+6)^2 - (2-4)^3$

a. 129 b. 113 c. 5 d. 28

____ 17. Determine this product.

$\left(-\frac{5}{6}\right)\left(-\frac{3}{4}\right)$

a. $\frac{5}{8}$ b. $\frac{19}{12}$ c. $-\frac{19}{12}$ d. $-\frac{5}{8}$

____ 18. Solve: $7 + \frac{3}{4}x < 19$

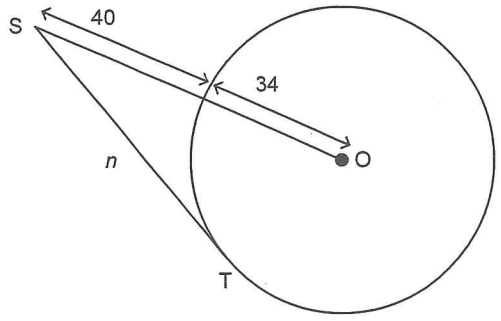
a. $x < 16$ b. $x > -16$ c. $x > 16$ d. $x < -16$

____ 19. Evaluate.

$\frac{5}{6} - \frac{3}{4} \times \frac{4}{5} + \frac{5}{6}$

a. $\frac{16}{15}$ b. $\frac{7}{9}$ c. $-\frac{1}{360}$ d. -9

____ 20. O is the centre of this circle and point T is a point of tangency.
Determine the value of *n*. If necessary, give your answer to the nearest tenth.



a. 6.4 b. 65.7 c. 81.4 d. 40

____ 21. Solve: $3 + x \leq 6$

a. $x \leq 2$ b. $x \geq 3$ c. $x \leq -3$ d. $x \leq 3$

____ 22. Which points lie on the graph represented by the equation $y = 14 - 5x$?
P(1, 9), Q(2, 18), R(2, 4), S(0, 9)
a. P and R b. Q and R c. R and S d. P and Q

____ 23. A square has an area of 28.8 cm^2.
Determine the side length of the square, to the nearest millimetre.
a. 5.4 cm b. 5 cm c. 5.37 cm d. 5.3 cm

____ 24. Evaluate: $(-2)^5 \times (-2)^4 \div (-2)^0$
a. 256 b. 1 048 576 c. −512 d. 512

____ 25. Solve: $\frac{x}{6} - 2 = 5$
a. 17 b. 32 c. 1 d. 42

____ 26. Name the coefficients of the variable in the polynomial $-3x^2 + 7x - 9$.
a. 3, 7 b. −3, 7 c. −3 d. −3, −9

____ 27. Which fraction is a perfect square?
i) $\frac{9}{40}$ ii) $\frac{9}{100}$ iii) $\frac{12}{100}$ iv) $\frac{3}{10}$

a. iii b. ii c. i d. iv

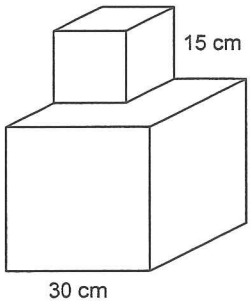
____ 28. Which expressions have positive values?
i) $\left[(-6)^2\right]^5$ ii) $\left[-(-6)^2\right]^5$ iii) $-\left(6^2\right)^5$ iv) $-\left[-(-6)^2\right]^5$

a. ii and iii b. i and ii c. i and iv d. ii and iv

____ 29. Which of these numbers is a solution of $y > -6$?
i) 6 ii) −3 iii) −6 iv) −7

a. i and ii b. iii and iv c. i and iv d. ii and iii

____ 30. This composite object is made of a 15-cm cube on top of a 30-cm cube.
Determine its surface area.



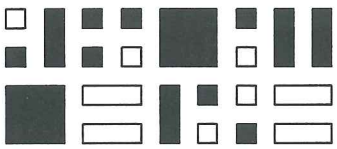
a. 6750 cm^2 b. 5625 cm^2 c. 6525 cm^2 d. 6300 cm^2

____ 31. Name the two whole numbers whose squares are closest to $\frac{535}{10}$.

a. 4, 9 b. 7, 8 c. 16, 25 d. 49, 64

____ 32. A large white square represents an x^2-tile, a large black square represents a $-x^2$-tile, a white rectangle represents an x-tile, a black rectangle represents a $-x$-tile, a small white square represents a 1-tile, and a small black square represents a -1-tile.

Write the simplified polynomial.



a. $2x^2+2$ c. $2x^2+x+2$

b. $-2x^2+x-2$ d. $-2x^2-2$

____ 33. Which equations describe vertical lines?

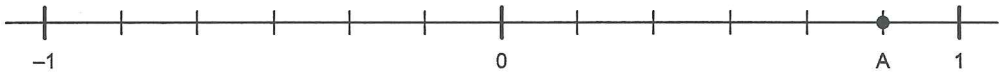
i) $x+6=14$ ii) $y-14=6$ iii) $x+y=6$ iv) $14x=6$

a. ii and iii b. ii and iv c. i and iv d. i and iii

____ 34. Divide: $(12x^2-8x^2)\div 4x$

a. $8x-4$ b. $3x-2$ c. $3x-2x$ d. $3x-8x^2$

____ 35. Which rational number is represented by the letter A on the number line?



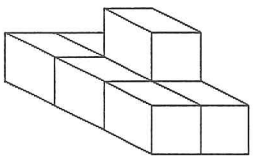
a. 0.8 c. $\frac{5}{6}$

b. 5 d. 0.5

____ 36. A rectangle has length 6 cm and width 4 cm.
The rectangle is to be enlarged by a scale factor of 5.
Calculate the length of the enlargement.

a. 11 cm b. 30 cm c. 50 cm d. 20 cm

____ 37. This object is made from 7 centimetre cubes. Determine its surface area.



a. 20 cm^2 b. 28 cm^2 c. 42 cm^2 d. 26 cm^2

____ 38. Which of these inequalities has –4 as a solution?

i) $p+1 \leq -2$
ii) $q+2 > -2$
iii) $r-1 < -4$
iv) $s-4 \geq -4$

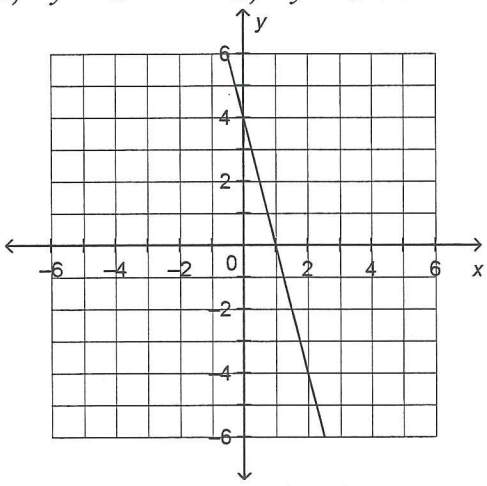
a. ii and iv b. i and iv c. i and iii d. i and ii

____ 39. The cost to rent a piece of equipment is $25, plus $7.27 per hour. Calculate the cost of renting the equipment for 7 h.

a. $39.27 b. $75.89 c. $1272.25 d. $225.89

____ 40. Which equation describes the graph below?

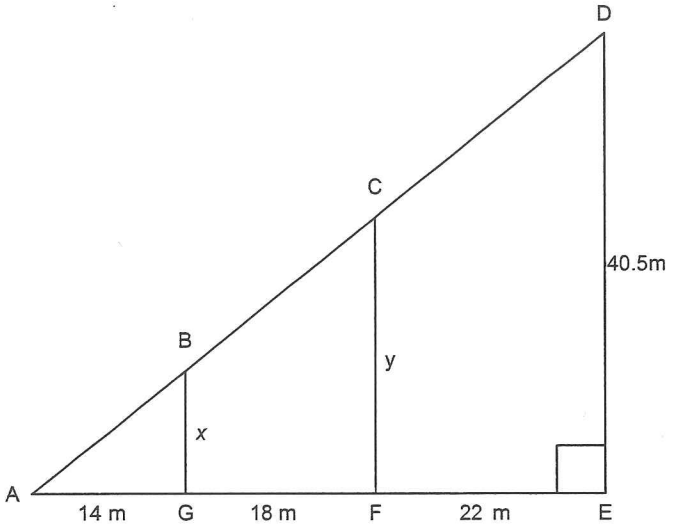
i) $y = 4x$ ii) $y = 4x + 4$ iii) $y = -x + 4$ iv) $y = -4x + 4$



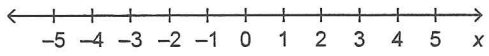
a. iii b. iv c. ii d. i

Short Answer

41. Determine the lengths of BG and CF in these similar triangles.



42. Solve, then graph this inequality: $x + 4 \geq 0$



43. Insert <, >, or = to make each expression true.

a) $1.125 \square 1\frac{1}{8}$

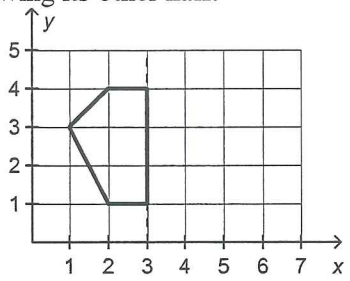
b) $5\frac{2}{3} \square 5.65$

44. Evaluate: $(-4)^8 \div (-4)^7 - (-3)^3 \div (-3)^0$

45. Order these numbers from least to greatest.

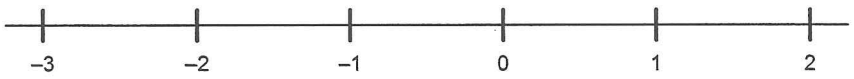
$-\frac{5}{8}, -\frac{2}{3}, -\frac{3}{4}, -\frac{7}{12}$

46. This polygon is one-half of a shape. Use the dotted line as a line of symmetry to complete the shape by drawing its other half.



Problem

47. a) Show these rational numbers on the number line:
$-1\frac{2}{3}$, 0.3, $1\frac{3}{4}$, $-\frac{7}{8}$, –0.3, –2.5, 1.2, $\frac{2}{3}$

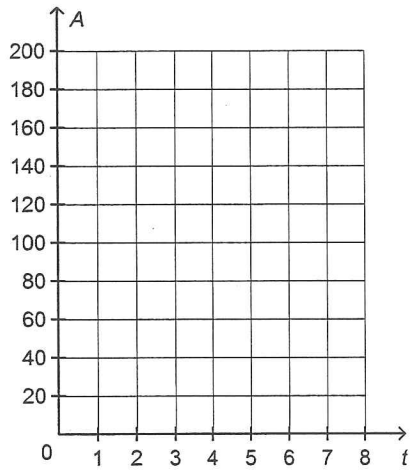


b) Which number is least?
c) Which number is greatest?

48. Create a polynomial that is added to $3x^2 + 4x + 7$ to get $5x^2 + 7x + 12$.
Explain how you found your answer.

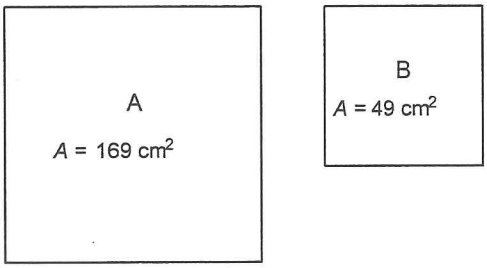
49. Geoffrey has \$195 in his savings account. Each week he withdraws \$30.
    a) Write an equation that relates the amount of money in his account, A dollars, after t weeks.
    b) Create a table of values for the relation, then graph the relation. Use values of t from 0 to 6. Will you join the points on the graph? Explain.

t	0	1	2	3	4	5	6
A							



    c) At what point will Geoffrey have \$45.00 in his account?

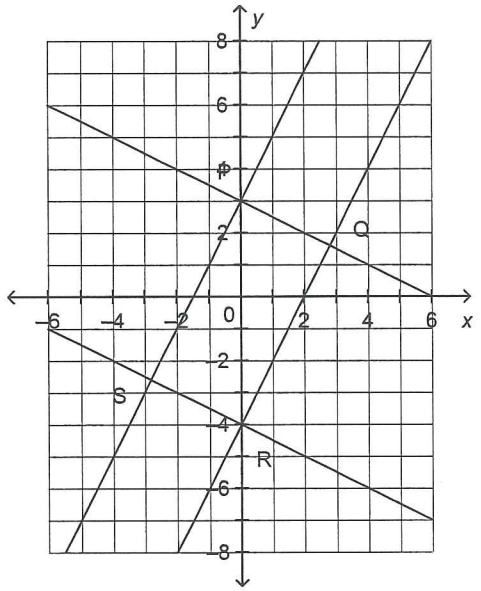
50. Square B is a reduction of square A. Determine the scale factor.



51. The lines on the grid below intersect to form rectangle PQRS.
The equations of the lines are:

$y = 2x + 3$; $y = 2x - 4$; $y = -\frac{1}{2}x + 3$; and $y = -\frac{1}{2}x - 4$

What is the equation of the line on which each side of the rectangle lies?
a) PQ b) QR c) RS d) PS



52. A circular mirror with radius 22 cm hangs from a hook.
The wire is 40 cm long and is a tangent to the circle at points A and B.
How far, to the nearest tenth, above the top of the mirror is the hook?